

AC. 174.

ZANZIBAR PROTECTORATE.

ANNUAL REPORT

ON THE

MEDICAL DEPARTMENT

FOR THE YEAR

1924.

ZANZIBAR:

PRINTED BY THE GOVERNMENT PRINTER.

1925.



Digitized by the Internet Archive
in 2019 with funding from
Wellcome Library

<https://archive.org/details/b31479716>

CONTENTS.

MEDICAL, SANITATION AND BIOLOGICAL DIVISIONS.

SECTION I.

	PAGE.
ADMINISTRATION	
Staff	... 1

SECTION II

PUBLIC HEALTH

A. General Remarks	... 2
1. General Diseases	... 3
2. Communicable Diseases	... 4
(a) Mosquito or Insect-Borne	... 4
(b) Infectious or Epidemic	... 6
(c) Helminthic	... 7
3. Local Diseases	... 8
B. European Officials	... 8
C. Asiatic Officials	... 9
D. General European Population	... 9
E. General Native Population	... 10
Vital Statistics	... 10

SECTION III.

SANITATION.

A. General Review of the Work done	... 12
1. Administration	... 12
(1) Staff	... 12
(2) Legislation	... 12
2. Preventative Measures	... 12
(1) Mosquito and Insect-Borne Diseases	... 12
(2) Infectious or Epidemic Diseases	... 12
(3) Helminthic Diseases	... 15

	PAGE.
3. General Measures	... 16
(a) General Sanitation	... 16
(b) Water Supply	... 17
(c) Drainage	... 18
(d) Refuse Removal and Disposal	... 18
(e) Housing	... 19
(f) Police Lines	... 20
(g) Slaughter-House	... 21
(h) Markets	... 21
(i) Foodstuffs	... 22
(j) Cowsheds and Dairies	... 22
4. Poor and Leper Asylums	... 24
5. Port Quarantine Service	... 27
6. School Medical Service	... 30
7. Bacteriological, Pathological and Analytical Laboratory	... 32
8. Control of Opium	... 35
B. Measures taken to spread the knowledge of Hygiene and Sanitation	... 35
C. Recommendations for future work (<i>see</i> Section VII)	... 35

SECTION IV.

HOSPITALS AND DISPENSARIES.	... 36
In-patients	... 36
Operations	... 36
Buildings	... 37

SECTION V.

ZIWANI POLICE LINES.	... 37
Central Prison	... 38
Lunatic Asylum	... 38

SECTION VI

	PAGE
EXTRA-DEPARTMENTAL. ...	39
(a) Registration of Medical Practitioners and Dentists ...	39
(b) Zanzibar Maternity Association ...	39

SECTION VII.

RECOMMENDATIONS. ...	39
A. Recommendations in 1923 Report and Action taken ...	39
(a) Medical Division ...	39
(b) Sanitation Division ...	40
B. Recommendations for 1925 ...	42

TABLES.

Table I. Staff ...	49
,, II. Financial ...	50
,, III. Statistics of Population ...	51
,, IV. Summary of Routine Sanitary Work done ...	57
,, V. Meteorological Returns ...	66
,, VI. Return of Diseases and Deaths ...	68
(1) In and Out-patients (Non-Europeans only) ...	68
(2) In and Out-patients (Europeans only) ...	72
(b) Infectious Diseases Hospital ...	74

APPENDICES.

I. Annual Medical and Sanitary Report for Chake Chake ...	77
II. Annual Medical and Sanitary Report for Weti ...	84
III. Annual Report of Biological Division ...	89
IV. Annual Report of Zanzibar Maternity Association ...	101
V. Report on Treatment of Leprosy by Dr. D. S. Scott ...	105
VI. An Operation for the Radical Cure of Hydrocele by Dr. D. S. Scott ...	106

VETERINARY DIVISION.

SECTION I.

	PAGE.
ADMINISTRATION	... 107
A. Staff	... 107
B. Financial	... 107
C. Legislation	... 108

SECTION II.

DISEASES OF ANIMALS.

A. Diseases of Ruminants	... 108
B. Diseases of Equines	... 113
C. Diseases of Canines	... 113
D. Diseases of Birds	... 114

SECTION III.

RECOMMENDATIONS.	... 114
------------------	---------

TABLES.

Table I. Death Returns	... 115
,, II. Importations	... 115
,, III. Exportations	... 116
,, IV. Abattoir Returns	... 117
,, V. Post-mortem Returns	... 117
,, VI. Laboratory Returns	... 118
,, VII. Veterinary Hospital Returns	... 119

ZANZIBAR PROTECTORATE.

REPORT ON THE MEDICAL DEPARTMENT, FOR THE YEAR 1924.

SECTION I.

ADMINISTRATION.

STAFF.

The establishment for 1924 as sanctioned in the estimates was as follows:—

EUROPEANS.

One Principal Medical Officer
One Senior Medical Officer
Five Medical Officers
One Senior Medical Officer of Health
One Assistant Medical Officer of Health
One Economic Biologist
One Sanitary Superintendent
One Matron
Six Nursing Sisters

ASIATICS.

One Chief Sanitary Inspector
Six Sub-Assistant Surgeons
Six Dispensers
Nineteen Sanitary Inspectors
One Vaccinator
One Chief Clerk, Sanitary Division
Seven Clerks
One Storekeeper
One Senior Laboratory Assistant
One Laboratory Assistant
One Inspector of Dead
Two Sanitary Overseers
One Engineer and Foreman

NATIVES.

One Dispenser
 One Assistant Dispenser
 Eleven Apprentice Dispensers
 Hospital and Dispensary Attendants
 Infectious Disease Hospital Attendants
 Vaccinators
 Menial Staff.

RETIREMENT.

Dr. J. S. de Sousa, on 31st January, 1924.

DEATH.

Asiatics.

Laboratory Assistant, E. A. da Silva, on June 23rd, 1924.

SECTION II.

PUBLIC HEALTH.

A. GENERAL REMARKS.

Only one Medical Officer was available for the whole of Zanzibar Island from January to September. As could only be expected under the circumstances, the health of this Officer broke down and as far as possible his duties were undertaken by the Principal Medical Officer or Senior Medical Officer of Health. This seriously handicapped the work of the Department, but it is satisfactory to note that the records for the whole year show that some progress has been made. More patients have been treated, and by means of an increased number of District Dispensaries, and by visits of Medical Officers to other villages, medical aid has been brought within reach of many more of the inhabitants of both islands. It is also satisfactory to note that only one death was due to Small Pox and that no case of this disease occurred in Pemba.

The Vital Statistics show some definite improvement. In Zanzibar Island the number of deaths is the lowest and in Zanzibar Town the number of births the highest recorded since registration was made compulsory.

The total number of cases treated at Government Hospitals and Dispensaries was 40,247 with 123 deaths as compared with 38,156 cases with 148 deaths in 1923 and 34,322 cases with 133 deaths in 1922. The figures for the past year, however, do not include a large number of cases treated in villages where no dispensary exists. For the greater part of the year a Medical Officer has visited three such villages weekly. Other villages have also been visited occasionally and, in all, a large number of patients have been treated in this manner.

Since only one death from Small Pox is included in last year's total as against 60 in 1923 and 54 in 1922 it might appear that a greater reduction in the total number of deaths from all causes should be recorded. That this is not so is explained by the fact that the extension of district work and the provision of a motor-car ambulance have resulted in many incurable district cases being brought into hospital.

TABLE A.

The following table shows by stations the total number of cases, with deaths, treated at Government Hospitals and Dispensaries during 1924 and 1923:—

Station	1924		1923	
Zanzibar Island.	Cases.	Deaths.	Cases.	Deaths.
Zanzibar	13,841	65	17,346	120
Selem	2,046	—	2,186	—
Mkokotoni	2,928	2	2,055	2
Mwera	1,174	—	630	—
Chwaka	1,237	—	661	—
Machui	1,286	—	957	—
Mahonda	540	—	—	—
Mbiji	1,480	—	—	—
Pemba Island.				
Weti	3,905	23	4,887	8
Chake Chake	7,479	30	6,246	17
Mkoani, Kengeja	4,331	3	3,188	1
Total	40,247	123	38,156	148

From the above table it will be observed there was a large reduction in the number of cases treated at Zanzibar and Weti as compared with that of the previous year. In Zanzibar the decrease was no doubt due to the shortage of staff already referred to. In Weti it is ascribed to the many changes in Medical Officers which occurred at this Station during the year; some time is necessary for a new Medical Officer to obtain the confidence of the natives.

1. GENERAL DISEASES.

During the year 706 cases of Anæmia and 405 cases of Debility, usually the results of Ankylostomiasis, were treated. Four cases of Debility ended fatally. In Zanzibar Township 277 deaths were registered as due to Debility and 16 as due to Anæmia. Six cases of Diabetes, with one death, were treated as compared with seven cases with no deaths in 1923. A second death from this disease was registered in Zanzibar.

2. COMMUNICABLE DISEASES.

(a) Mosquito or Insect-Borne.

Malaria.—During the past year 3,004 cases with three deaths were recorded as compared with 3,072 cases with one death in 1923 and 2,011 cases with no deaths in 1922. In Zanzibar Town 155 deaths were registered as due to this disease as against 131 in 1923.

The cases treated last year were diagnosed microscopically and clinically as follows:—

Benign Tertian	1,274
Sub-Tertian	1,605
Quartan	14
Chronic	111

TABLE B.

The following table shows the number of cases treated at each station during 1924, 1923 and 1922:—

Station	1924.	1923.	1922.
Zanzibar Island.			
Zanzibar	1,340	1,301	689
Selem	84	104	54
Mkokotoni	266	86	24
Mwera	28	11	7
Machui	84	72	—
Chwaka	73	10	1
Mahonda	16	—	—
Mbiji	46	—	—
Mangapwani	—	—	—
Pemba Island.			
Weti	256	439	303
Chake Chake	558	699	553
Mkoani, Kengeja	253	350	380
	—	—	—
Total	3,004	3,072	2,011
	—	—	—

It will be observed that the large number of cases treated in Zanzibar Town during 1923 was exceeded last year. Part of this increase, as was the case in 1923, is no doubt due to more accurate diagnosis transferring many fever cases from the "Undefined Fever" heading, but, taken in conjunction with the increase in the number of deaths registered as due to Malaria, indicates the high prevalence of this disease in the town and the necessity for more drastic anti-mosquito measures. It is satisfactory to note a decrease in the number of cases of Malaria in each of the Pemba Stations.

Blackwater Fever.—Four cases with two deaths occurred during the year as compared with six cases and two deaths in 1923 and nine cases with one death in 1922.

Of last year's patients, one was of West Indian extraction and three were Asiatics (British Indians). Death in one of the fatal cases was due to Suppression of Urine and in the other Cardiac Failure. Intense Jaundice and Vomiting were recorded in three of the cases and Suppression of Urine in one.

Sex and Age.—All the patients were of the male sex, aged 22, 24, 50 and 58 years respectively. The youngest and oldest patients recovered, while the two of intermediate age succumbed to the disease.

Previous attacks.—One patient had suffered from an attack twenty months previously.

Predisposing and Exciting Causes.—All the patients had resided for many years in the tropics and suffered from numerous attacks of Malaria for which no adequate treatment had been carried out. Three of the patients had been suffering from fever several days prior to the commencement of the hæmoglobinuria. Malaria parasites (Sub-Tertian) were found in the blood of one patient after the hæmoglobinuria commenced. Two patients are recorded as having taken one or two tabloids of Quinine occasionally as a prophylactic.

Locality.—Two of the patients contracted the disease while living at Chake Chake, but one had recently transferred there from Zanzibar. One contracted the disease in Zanzibar Town and one while living on the outskirts of the Town.

Seasonal Incidence.—The cases occurred in February, May, July and September.

TABLE C.

The following table shows the monthly incidence of Malaria and Blackwater Fever cases:—

	No. of cases of Malaria treated.	Blackwater Fever cases
January	306	—
February	195	1
March	210	—
April	180	—
May	255	1
June	370	—
July	292	1
August	317	—
September	254	1
October	204	—
November	200	—
December	221	—
	—	—
Total Cases	3,004	4
	—	—

Dengue.—Eleven cases are recorded as against two in 1923 and none in 1922. As stated in last year's report, this disease is much more common than the returns indicate and there is no doubt that many cases are included under "Undefined Fever".

Undefined Fever.—During this year 338 cases were treated as compared with 557 in 1923 and 1,085 in 1922. Some of the cases included under this heading are similar to a mild type of Sandfly Fever, but most are no doubt Dengue, Influenza or Malaria, with complications or atypical symptoms.

(b) *Infectious or Epidemic Diseases.*

Beri-Beri.—Three cases were treated during the year. Three cases, one fatal occurred during 1923 and one case in 1922.

Cerebro-Spinal Meningitis.—No case was reported last year as against two cases, one fatal, in 1923 and three cases, all fatal, in 1922.

Dysentery.—Nineteen cases with one death were reported as compared with 24 cases with no deaths in 1923 and 55 cases with one death in 1922. Twelve deaths from this disease were registered in Zanzibar Township during the past year as against 13 deaths in 1923.

Enteric Fever.—No cases were treated last year as compared with six cases in each of the two previous years. Three deaths in Zanzibar Town were registered by private practitioners as due to Enteric Fever.

Gonorrhœa.—During the past year 944 cases were treated as compared with 797 cases in 1923 and 711 cases in 1922.

Influenza.—One hundred and thirty-eight cases with four deaths were recorded. In 1923 and 1922 there were 290 and 571 cases respectively.

Leprosy.—Forty-one new cases of Leprosy, 21 in Zanzibar Island and 20 in Pemba, were discovered during the year as compared with 31 during 1923.

Measles.—Twenty-one cases were reported.

Pneumonia.—Thirty-nine cases with twelve deaths were treated during the year as compared with 101 cases with 11 deaths in 1923 and 100 cases with 12 deaths in 1922. In Zanzibar Town 37 deaths from this disease were registered as compared with 33 during the previous year.

Small Pox.—Ten cases with one death occurred during the year as compared with 236 cases with 60 deaths in 1923 and 177 cases with 54 deaths in 1922. No case occurred in Pemba.

TABLE D.

The following table shows the number of cases of Small Pox in Zanzibar and Pemba during the last four years:—

	1924.		1923.		1922.		1921.	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Zanzibar Island.	9	1	203	56	167	54	158	56
Pemba Island.	—	—	33	4	10	—	2	—
	9	1	236	60	177	54	160	56

Syphilis.—Two hundred and thirty-nine cases were treated during the year as compared with 263 cases in 1923 and 463 cases in 1922.

Tetanus.—One case which terminated fatally was recorded.

Tuberculosis.—One hundred and thirty-two cases with 10 deaths were treated last year as against 90 cases with 10 deaths in 1923 and 133 cases with seven deaths in 1922.

TABLE E.

The following table shows the number of deaths reported from Tuberculosis in Zanzibar Town during the past four years.

	Reported by Qualified Practitioners.	Reported by Unqualified Practitioners.	Total.
1921	35	70	105
1922	22	141	163
1923	30	155	185
1924	30	137	167

Yaws.—Four hundred and twenty-nine cases were recorded last year as compared with 209 cases in 1923. and 365 cases in 1922.

(c) *Helminthic Diseases*.

During the past year 3,521 cases of Helminthic Diseases were treated.

TABLE F.

The following table shows the number of cases of disease treated as compared with the two previous years:—

	1924	1923	1922
Bilharzia	114	130	122
Ascaris	32	50	84
Filaria	185	274	211
S. Intestinalis	10	12	6
Ankylostomiasis	3,172	2,511	2,033
Other Diseases	8	28	3
	3,521	3,005	2,459

Bilharziasis.—Of the 114 cases of Bilharziasis, 80 were reported from Pemba and 34 from Zanzibar Island.

Ankylostomiasis.—Of the cases treated last year 1,917 were reported from Pemba and 1,255 from Zanzibar Island. Proposals have been submitted separately with a view to commencing an intensive campaign against this disease.

Elephantiasis.—Eighty-three cases were recorded last year as compared with 153 cases in 1923 and 130 cases in 1922.

3. LOCAL DISEASES.

The principal diseases recorded under this heading were as follows:—

Neuralgia	386	Constipation	3,204
Paraplegia	12	Hepatic Congestion	299
Hemiplegia	9	Ascites	12
Conjunctivitis	579	Splenitis	171
Cataract	24	Hæmaturia	33
Coryza	327	Urethritis	102
Bronchitis	2,588	Hydrocele	249
Asthma	146	Orchitis	255
Dental Caries	1,493	Myalgia	1,613
Appendicitis	2	Ulcers	7,011
Hernia	197	Scabies	812

B. EUROPEAN OFFICIALS.

During the year 212 cases of illness were recorded among the European Officials, and for 110 of these the patients were placed off duty.

The principal causes of illness were:—

Dysentery	1	Tonsilitis	14
Influenza	3	Renal Calculus	1
Malaria	31	Respiratory Diseases	20
Undefined Fever	12	Digestive Diseases	46
Debility	4	Injuries	24
Pharyngitis	9		

TABLE G.

Table showing the Sick, Invaliding and Death Rates of European Officials for 1923 and 1924:—

	1923	1924
Total number of officials resident	112	116
Average number resident	76	74
Total number on sick list	123	110
Total number of days on sick list	487	544

TABLE G.—(Continued.)

	1923	1924
Average daily number on sick list	1.33	1.49
Percentage of sick to average number resident	1.75	2.00
Average number of days on sick list for each patient	3.96	4.95
Average sick time to each resident	6.41	7.85
Total number invalided	5.00	1.00
Percentage of invalidings to total number resident	4.46	0.86
Percentage of invalidings to average number resident	6.58	1.35
Total deaths	3.00	1.00
Percentage of deaths to total residents	2.68	0.86
Percentage of deaths to average number resident	3.95	1.35

Medical Boards.—One Medical Board was held during the year which resulted in the officer being invalided for General Debility.

C. ASIATIC OFFICIALS.

During the year 317 cases of illness were recorded among the Asiatic Officials and for 101 of these the patients were admitted to hospital.

The principal causes of illness were:—

Influenza	10	Tabes Dorsalis	1
Malaria	131	Respiratory Diseases	34
Pneumonia	4	Strangulated Hernia	1
Tuberculosis	2	Digestive Diseases	44
Undefined Fever	16	Injuries	16

Deaths.—Two deaths occurred during the year; one from sudden Cardiac Failure and one from Tabes Dorsalis.

D. GENERAL EUROPEAN POPULATION.

The total number of Europeans (officials and non-officials) treated at Government Hospitals and Dispensaries was 366 with one death as compared with 569 with three deaths in 1923 and 362 with one death in 1922.

The principal causes of illness were:—

Dengue	5	Respiratory Diseases	18
Dysentery	1	Digestive Diseases	111
Influenza	6	Myalgia	18
Malaria	41	Skin Diseases	28
Tuberculosis	1	Undefined Fever	27

Deaths.—In all, three deaths of Europeans occurred during the year from the following causes:—

Chronic Nephritis and Cardiac Failure	1
Injuries (Motor car accident)	1
Injuries (Burns)	1

Births.—Nine births occurred during the year.

E. GENERAL NATIVE POPULATION.

Vital Statistics.

A census of the native population of the Protectorate was taken last year during the months of March, April and May and the results obtained are shown in Table III (1).

Compared with the returns of the previous census in 1910, it will be found that the native population has increased by 14,453. Of this increase 8,697 has occurred in Zanzibar Island and 5,756 in Pemba.

No census of the non-native population was taken last year. In a census taken in 1921 the non-native population numbered 14,125, and is now estimated at 15,300, making the total population of the Protectorate 217,965 as compared with 197,199 in 1910 or an increase of 20,766.

The non-native population consists chiefly of British-Indians (of whom it is estimated there are now 14,000), Portuguese-Indians 900, Europeans 250, Cingalese, French Colonials, Seychellians and others 150.

The total population of Zanzibar Township is estimated at approximately 40,000 of whom, as shown by last year's census, 26,499 are natives. In 1910 the total population of the town was 35,362 of whom 27,612 were natives. There has, therefore, during the past fourteen years been a decrease in the number of natives resident in the town of 1,113 and an increase in the non-natives of 6,250. The total population of the district areas in Zanzibar Island is estimated at 89,274 of whom 88,517 are natives and 757 non-natives.

Births and Deaths Returns.—The registration of Births and Deaths is compulsory, but, although there is yearly improvement in this respect, cannot yet be considered very reliable. For the whole Protectorate the returns for last year record 3,915 births and 4,111 deaths. Of these, 2,634 births and 2,832 deaths were returned from Zanzibar Island and 1,281 births and 1,279 deaths from Pemba.

TABLE H.

The following table compares the above figures with those of the previous two years:—

Zanzibar Island	1922	1923	1924
Births	2,658	2,035	2,634
Deaths	3,457	3,454	2,832
Pemba Island			
Births	1,667	1,154	1,281
Deaths	1,216	1,289	1,279
Total			
Births	4,325	3,189	3,915
Deaths	4,673	4,743	4,111
	—	—	—
Excess of Deaths over Births	348	1,554	196
	—	—	—

Only live births are included in the returns; no statistics are at present available with regard to the number of dead births or infantile mortality.

As compared with the previous year, it is satisfactory to note that the excess of deaths over births has decreased from 1,554 to 196. In Pemba two more births than deaths were registered, while in Zanzibar Island the deaths exceed the births by 198. The total number of births has increased by 726 and the deaths decreased by 632.

In Zanzibar Island the total number of deaths (2,832), registered is the lowest on record.

TABLE J.

Table showing the number of births and deaths registered in Zanzibar Island 1915-1924:—

	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924
Town Area										
Births	332	296	305	418	341	473	479	481	413	501
Deaths	1,008	1,168	1,255	1,359	1,180	1,083	1,076	1,262	1,258	1,043
Districts										
Births	1,907	2,058	2,381	1,793	1,435	2,713	2,112	2,177	1,622	2,133
Deaths	2,212	2,089	2,235	2,515	1,983	1,958	2,185	2,195	2,196	1,789
Excess of deaths										
over births	781	903	804	1,663	1,383	145	670	799	1,419	198

The Birth and Death Rates for Zanzibar Township and Zanzibar Island district areas, based upon the above figures and the estimated populations for 1923 and 1924, are as follows:—

	Birth Rate	Death Rate	Birth Rate	Death Rate
Zanzibar Township				
Area	10.9	33.1	12.5	26.1
Zanzibar Island				
District Areas	18.4	25.0	23.8	20.0

Emigration and Immigration.—The Emigration and Immigration returns show a large excess of Immigrants over Emigrants. During the last four years alone, the returns show an Immigrant excess of more than 10,000, and although the figures cannot be accepted as very reliable there is no doubt that but for the excess of Immigrants over Emigrants the 1924 census returns would have shown a considerable diminution in population since 1910.

SECTION III.

SANITATION.

A. GENERAL REVIEW OF THE WORK DONE.

1. *Administration.*

(1) *Staff.*—Dr. B. Spearman, Senior Medical Officer of Health, returned from leave on January 30th.

Dr. H. C. Quin, Assistant Medical Officer of Health, proceeded on leave on May 7th, and was absent from the Protectorate for the remainder of the year, being transferred to the West African Medical Service.

(2) *Legislation.*—Affecting the Public Health Department enacted during 1924:—

The “Manufacture and Sale of Aerated Waters Decree” of 1921 was repealed and the “Manufacture and Sale of Aerated Waters and Ice” Decree promulgated on 22nd September, 1924, and the Rules issued under the original Decree were amended to include Ice.

Amendment to the Rules under the “Diseases of Animals Decree” of 1923.

Extends the rule governing the Dipping and Disinfecting of Cattle by including inoculation.

2. *Preventive Measures.*

(1) *Mosquito and Insect-Borne Disease.*—All anti-malarial and anti-mosquito work was put in charge of the Economic Biologist at the beginning of the year, and he also took over the control of the Mosquito Brigade.

This arrangement worked satisfactorily and much good work has been done during the year, an account of which is given in the report by the Economic Biologist.

(2) *Infectious or Epidemic Diseases.*

Small Pox.—A total of 10 cases occurred during the year with one death. Four of these cases were removed from ships arriving in quarantine and one case developed among the quarantined passengers. Five cases only therefore arose in the Island during the year. Three of these developed in the Mwera district, one in the Town and one in the Chwaka district. No cases occurred in Mkokotoni district, Tumbatu Island or Pemb.

TABLE K.

Table showing the distribution of cases of Small Pox in Zanzibar Protectorate during 1924:—

IN ZANZIBAR ISLAND.

On Steamers and Dhows in Harbour	...	4
Town Districts	...	1
Developed among contacts in Segregation Camp	...	1
Mwera District	...	3
Chwaka District	...	1
Mkokotoni District	...	0
		—
	...	10
		—

IN PEMBA ISLAND.

Weti District	...	0
Chake Chake District	...	0
Mkoani District	...	0
		—
	...	0
		—

Ages :—			Races :—	Grand Total 10.
Under 1 year	...	0		
1 to 5	...	2	Swahili	... 5
6 to 10	...	4	Ismaili	... 2
11 to 16	...	1	Arab	... 1
21 to 30	...	2	Hindu	... 1
31 to 40	...	1	Mohammedan	... 1
		<hr/>		<hr/>
Total	...	10		... 10

Vaccination:—This has been steadily continued throughout the year. In Zanzibar Island 16,258 and in Pemba Island 6,891 persons were vaccinated during the year, making a total of 23,149 for the whole Protectorate.

Owing to the prevalence of Small Pox in Bombay and to the fact that four ships from that port arrived in quarantine with Small Pox on board, it has been necessary to vaccinate a large proportion of the passengers arriving by the Bombay-Durban boats. All dhow crews and dhow passengers arriving from northern ports during the north-east monsoon and passengers from mainland ports are also vaccinated if necessary. In addition to this passengers proceeding to Pemba are required to present themselves for inspection and vaccination prior to embarkation.

All this work entails a large number of vaccinations, uses up a good deal of lymph and takes up a large proportion of the time of the vaccinating staff. Vaccination is also carried on regularly throughout the Town and in the districts as time and supply of lymph allow.

Supplies of lymph are obtained from Bombay or Dar-es-Salaam. From Bombay 19,050 doses were obtained and 18,900 from Dar-es-Salaam. The results from supplies, especially in the case of primary vaccinations, were quite satisfactory in those which could be inspected. A large number of results are of course unknown. There is no doubt that in many cases the vaccine lymph is washed off as soon as the native leaves the office. Every endeavour is made to keep the patients waiting in the shade for some twenty minutes. But when, as often happens on Monday mornings, the vaccinating room is literally packed with natives and Indians, some off a recently arrived Bombay boat and others taking that day's mail to Pemba, it is not easy to keep a check on the gesticulating mob all anxious to get attended to and depart as soon as possible. At intervals during the year Vaccinators were sent to Mkokotoni and Mwera, where they vaccinated 328 and 500 persons respectively with satisfactory results, although the exact number of successes and failures cannot be stated.

Supplies of vaccine lymph are dispatched to Pemba weekly on ice.

TABLE L.

Table showing the number of persons vaccinated during the year 1924:—

I.—IN ZANZIBAR ISLAND.

Months.	Town.	Steamships.	Dhows.	Mwera.	Chwaka.	Mkokotoni	Total
January	426	12	980	299	—	77	1,794
February	732	—	763	201	—	29	1,725
March	730	38	852	—	—	49	1,669
April	531	47	379	—	—	21	978
May	466	20	289	—	—	26	801
June	555	131	262	—	—	13	961
July	1,027	12	66	—	—	7	1,112
August	2,857	50	75	—	—	46	3,028
September	1,503	48	76	—	—	52	1,679
October	368	419	100	—	—	4	891
November	190	169	337	—	—	2	698
December	184	230	506	—	—	2	922
Total	9,569	1,176	4,685	500	—	328	16,258

II.—IN PEMBA ISLAND.

Chake Chake District	... 1,220
Weti District	... 4,701
Mkoani District	... 970

Note:—Of 9,569 vaccinations performed in the Township, 6,677 were Positive, 2,786 Negative and 106 Unknown. The exact result of the vaccinations performed in the Districts could not be ascertained, but it is believed that over 50 per cent. proved Positive.

Chicken Pox.—There was some prevalence of this disease during the year, six cases were admitted to Gulioni Infectious Diseases Hospital.

Measles.—Seventeen cases were admitted to Gulioni Infectious Diseases Hospital.

Plague.—No case of plague occurred during the year, but 16,432 rats were destroyed and 4,101 examined for *B. Pestis* with negative results. The classification of rats trapped is shown in Table 18.

Leprosy.—Twenty-one cases were reported in Zanzibar Island, 19 were removed to Funzi Leper Settlement, one died and one escaped prior to removal. The local distribution of the cases was as follows: Town 1, Mwera 16, Mkokotoni 2, Chwaka 2. Thus it will be seen that the greater portion of the cases were from Mwera in the centre of the Island.

Enteric Fever.—One case (an Indian) which ended fatally was reported.

Para Typhoid.—Three cases with two deaths, all Indians, occurred during the year.

Tuberculosis.—The number of deaths ascribed to Pulmonary Tuberculosis during the year was 167. Of these, 30 were reported by qualified practitioners. As mentioned in the report of previous years, Tuberculosis continues to take its toll of lives and will do so until housing conditions and the habits of the populace are improved.

Dysentery.—Twelve deaths were reported during the year from this cause. *Entamœba Histolytica* was diagnosed in the Laboratory on nine occasions and *B. Shiga* once.

Influenza.—Two cases were certified from this cause by qualified practitioners.

Tetanus.—One death occurred from this disease during the year.

(3) *Helminthic Diseases.*

Ankylostomiasis.—At present there is nothing to add to last year's report, as the Principal Medical Officer has submitted proposals for an intensive campaign against this disease. Carbon Tetrachloride has been introduced as a method of treatment with satisfactory results, although it cannot be claimed that one dose sterilises the patient completely.

Middle aged and elderly patients who have had the disease for many years and are in a state of profound anæmia made a very slow progress to recovery even after complete sterilisation. They seem to suffer from a most intractable form of chronic dyspepsia and are unable to derive any nourishment from their food.

Other Helminthic Diseases.—Ascariasis is common. Of 1,237 stools examined in the Laboratory 81 contained *Ascaris Ova*, but these ova are not so plentiful or easy to find in stools as *Ankylostome Ova*. I think there is no doubt that infestation with these worms give rise to many varied symptoms, and that the possibility of their presence should be considered in every sick native and European child.

Carbon Tetrachloride appears an efficacious antihelminthic in these cases, one patient at Walezo passing no less than 54 dead round worms after a full dose of this drug.

Tricocephalus dispar is present in practically every stool examined.

Protozoal Infection.—*Giardia Lamblia* is also frequent, but does not appear to give rise to symptoms.

Amœbic Dysentery is not common. In the few cases in which it can be definitely stated the disease is amœbic the infection appears to have been contracted on the mainland.

3. *General Measures.*

(a) GENERAL SANITATION.

The year under review is the first year during which the General Sanitation of the Town has been under the supervision of a trained European Sanitary Superintendent, and in the present holder of the post we are fortunate in possessing a man holding not only the Sanitary Inspectors Certificate of the Royal Sanitary Institute as well as the Tropical Diploma, but also holding the degree of Associated Member of the Institute of Sanitary Engineers with the additional advantage of some years' experience of work in East Africa and a knowledge both of the language and the native. The result has been a great improvement in the efficiency of the Sanitary Services rendered and a much stricter supervision of nuisances in general and a closer interpretation of the Building Decree. As is only inevitable, the general tightening up of the Sanitary Department has led to a certain amount of friction. An Oriental population not habituated to the strict observance of Sanitary Legislation is apt to resent what is considered an infringement of its privileges, and individuals while only too willing to see the law applied to their neighbour do not quite take the same view when the application is brought more closely home. It is gratifying to record, however, that this opposition soon died away and the average householder now finds it advisable to comply with the requirements of a nuisance notice rather than allow the case to go before the Court. The nett result is that the more congested districts of the Town look cleaner and better cared for, and glaring and obvious nuisances are becoming more conspicuous by their absence. Much, however, remains to be done, and it is almost impossible to get satisfactory results in the narrow and tortuous streets with the lofty

houses on each side through which goats and chickens wander at their own sweet will, and where one suddenly comes across a copra godown or a store for hides which is evident to the olfactory sense long before the place itself is reached, whilst in the background as one approaches the Malindi quarter is ever present the penetrating and pervading smell of dried shark. The large influx of dhows from the Persian Gulf and the Somali Coast during the north-east monsoon with their crews and immigrants of Somalis and Arabs, who crowd into Malindi and sleep everywhere and anywhere, does not lighten the task of the Sanitarian. These are all primitive people with primitive ideas, especially as regards to the disposal of refuse and night soil. Fortunately Malindi beach is wide and the tide covers it twice in the twenty-four hours. The Creek between the town proper and Ngambo is at low tide none too savoury. It is the discharging area of several drains and sewers and therefore at low tide is not in a pleasant condition. To remedy this it will be necessary to run a main drain with a tidal valve down the centre of the creek into which all drains empty themselves.

The average number of inspectors available for district work has been four. With this number it has not been found possible to undertake a complete house-to-house inspection. However, what has been done in this direction shows the urgent need for constant vigilance in sanitary control and the need for a complete sanitary survey of the town. Throughout the year only more urgent matters have been dealt with, and extensions of time for compliance with nuisance notices have been readily granted, many of the outstanding notices being due to these extensions.

The amount of work carried out during the year may be considered fairly satisfactory.

(b) WATER SUPPLY.

The new water supply has been in use throughout the year and has greatly added to the amenities and comforts of life, as well as proving an additional safeguard to the Public Health.

Bacteriological examinations of the water were made at intervals throughout the year and except after heavy rains 50 c.c. were found negative to *B. Coli*.

The water supply of Zanzibar may, I think, be considered very much above the average for a tropical city, but at the same time constant watchfulness is required to guard against contamination. It would also be advisable to take frequent samples from standpipes in the town in order to detect any leakage into the supply pipes. Samples so far taken have proved satisfactory, but time and staff do not allow of as frequent examinations as could be wished.

During the year 17 bacteriological examinations were made of samples taken from the main springs and metric chamber.

(c) DRAINAGE.

During the last two years, water closets with a flushing tank have been introduced into such houses occupied by European Government Officials as have a water supply. A certain number have also been installed in private houses belonging to well-to-do Indians. In the vast majority of cases, however, the old system of privy pit fed by a conduit pipe from the upper storeys remains in force. In the native huts in the native quarter of the town the ordinary privy pit is in use, the surface being rammed earth over boritis. Whether in native huts or in bazaar houses, these "choo" pits are very apt to give rise to a nuisance. In the native huts the earth floor is an admirable medium for the growth of ankylostoma larvæ and is probably one of the commonest sources of this widespread infection. What is required in all native huts is a cement platform with a slope for drainage and it is satisfactory to record that in a certain number of native huts of the better class, that such platforms have been installed. A model platform for bath and privy has been designed in the Health Office, and it is hoped in the course of time to get this installed in all native huts.

The case of the bazaar house privy was referred to in last year's report. Under present conditions it is not possible to do away with this type of privy, but cast-iron pipes with properly welded joints are everywhere insisted on, and the old leaky masonry pipe or cheap galvanised iron with open hopper joints are condemned wherever possible, and a better type of choo with sound drain pipes and properly connected covers is gradually being introduced.

The present system of choopits and soakaway pits is very objectionable and many of the drains originally intended for storm water have developed into sewers.

The real remedy is, of course, a water-borne sewage system which would bring about the disappearance of many of Zanzibar's most objectionable features and cause a great improvement in the general health of the population with the diminution of the cesspool breeding culex and consequent diminution of (culex borne) elephantiasis and filariasis.

(d) REFUSE REMOVAL AND DISPOSAL.

This is carried out as described in last year's report.

The large number of lanes in the town lend themselves admirably to the dumping of refuse and building debris. Efforts to combat this nuisance yielded encouraging results, and considerable improvement has been effected, 195 accumulations of building debris having been removed. In addition to this, all loose stones and coral chippings have been collected from the streets and Crown Land and dumped at the south end of the Creek.

Covered metal dustbins to the number of 437 have been provided by occupiers and owners of premises. This is a step in advance, which helps to improve the general cleanliness of the streets and diminish the fly nuisance. It has been the practice of this Department to issue wooden refuse boxes to householders and to rely on public dustbins to take the overflow. As mentioned in last year's report, it is questionable whether street refuse bins are not a source of nuisance through abuse.

The number of public dustbins in the streets in town has therefore been considerably reduced. This measure led to a few prosecutions for refuse dumping at the sites where public dustbins had been removed, but has otherwise made such marked improvement that the experiment has been fully justified. The issue of refuse boxes has been discontinued, as these boxes were continually being broken up and stolen, and householders are now required to supply their own.

(e) HOUSING.

The congestion in Zanzibar becomes yearly more acute, and the overcrowding in the Bazaar worse. As has been mentioned in previous reports, Tuberculosis is rife and until housing conditions are improved it can hardly be expected that the incidence will diminish.

A large proportion of the housing accommodation in the town is insanitary. This is chiefly due to the overcrowding of the land with buildings and people.

Each boat from Bombay brings a large number of Indian Immigrants, the majority of the poorest class, and somehow or other accommodation has to be found for them.

All building plans, whether for new buildings or for alterations, are submitted to the Medical Officer of Health for his approval. Plans and buildings are strictly examined, and approval is withheld wherever it is thought that the alteration or erection of new structures will interfere with the lighting and ventilation of the building or neighbouring premises. Under the present Building Decree the powers attached to the Medical Officer of Health are very vague, and too much is left to the personal opinion of the particular officer acting in that behalf.

This gives rise not only to lack of continuity, but also places too much responsibility on one person, who practically has to decide each particular case on its merits and thus frequently incurs the charge of being prejudiced or unfair in his actions. It is desirous, therefore, to introduce a new Decree which will be more definite and exact, and thus limit the discretionary power of particular officers such as the Building Surveyor or the Medical Officer of Health. In this connection it may be appropriate to mention the formation of the

Sanitary Advisory Board to advise the Government on general questions affecting the health and sanitation of the town of Zanzibar. In view of the many vexed questions connected especially with housing, but also numerous other matters, the writer felt that an impartial Committee, before whom sanitary measures and suggestions could be placed and duly considered before being acted on, would both diminish the latitude of the discretionary powers of the Medical Officer of Health and at the same time strengthen his authority. The proposal was therefore put before the British Resident, who approved of the foundation of a Committee consisting of the Senior Medical Officer of Health (Chairman), the Senior Commissioner, the Director of Public Works and three unofficial members (Dr. R. S. Taylor, Mr. Taibali Rajabali nominated by the Indian National Association, Mr. Muhsin bin Ali el-Barwani nominated by the Arab Association) with the Sanitary Superintendent as Secretary. The first meeting was held on 2nd December, 1924. The Board has since met monthly and has been engaged in drafting and considering an entirely new Building Decree which has since been forwarded to the Attorney-General for his consideration, criticisms and alterations. The formation of this Board is a guarantee that the sanitary reforms will be carried out on progressive and constructive lines, and is a source of great assistance to the Medical Officer of Health. It is to be hoped that in the near future, however, a Township Authority will be formed not only for Zanzibar town but also for such places as Weti and Chake Chake in Pemba, as is now the case in the neighbouring territories.

Native Huts.—Although many huts are built anyhow and anywhere, stricter supervision is now exercised and proper alignment required. All permits for native huts should be submitted to this office for approval. This would be, I think, a step in the right direction, but will involve a great deal of extra work, and an inspector of native huts may later be found necessary. In the present Building Decree no minimum area for plots is laid down nor is any particular type of hut or width of road required, nor is there any mention of position of latrine, kitchens or proportion of area permitted to be covered by buildings. These omissions have been remedied in the Decree now under consideration. A model type of hut has been designed by the Sanitary Superintendent, and a sum has been sanctioned in next year's estimates for the erection of such a hut on appropriate sites in Zanzibar, Chake Chake and Weti, so that the natives may see and copy it. The plan has been seen by intelligent natives who have suggested certain modifications from the original design which have been adopted.

(f) POLICE LINES.

Building of new lines at Ziواني was continued throughout the year. One new latrine was built, but, as the position was not considered satisfactory, the building of the second near by was not taken

in hand. New sites were allocated at the lower side of the lines. These will accommodate 32 seats and are being dug deeper than the previous one. Vent shafts are to be provided in order that fumigation may be carried out at regular intervals. The present new latrine is unsatisfactory and its accommodation is insufficient. It is hardly deep enough, being dug in impermeable soil and is already nearly full. When the other latrines are completed, it may be possible to deepen this one and to add vent shafts. Undoubtedly the best solution of the difficulty of disposing of the daily excreta of between 700 and 1,000 persons would be a water-flushed system to a septic tank and thence to the sea. Unfortunately the cost is prohibitive and it is doubtful if the water supply would be sufficient for such an installation.

The new latrines at Chwaka and Mwera have proved fairly satisfactory. Mosquitos (*Culex fatigans*) were at one time found breeding freely in the cesspools at Chwaka, but regular weekly oiling was instituted with good results.

(g) SLAUGHTER HOUSE.

The recently constructed slaughter-house was fully described in last year's report. It has functioned satisfactorily throughout the year. Certain minor improvements have been added, electric light installed, and Zanzibar may now claim to have a slaughter-house second to none on the East Coast. The conveyance of meat from slaughter-house to the market is still primitive, and a proper fly-protected lorry for meat transport is required.

Ante-mortem cattle and meat inspection are carried out by the Veterinary Officer, in whose report particulars will be found.

(h) MARKETS.

The town markets were regularly inspected during the year and the following minor improvements effected.

The boards of the butcher stalls were covered with zinc to facilitate washing, four proper chopping blocks of hard timber replaced the old logs which soon became saturated with blood. The habit of the butchers of squatting on their stalls in close proximity to the meat was put a stop to.

A proportion of the Estella Market was set aside for the sale of the Mji Mpia milk, zinc-lined shelves being fitted together with a sink, with a tap drawing water from the main for washing bottles.

The date and dried fish market at Machangani is quite unfitted for the sale of foodstuffs, being dirty, congested and without a water supply. During the year a Markets Committee, consisting of the Treasurer, the Senior Commissioner and the Medical Officer of

Health, was formed to consider the economics of the markets generally. At their request the Sanitary Superintendent drew up a report on the sanitary condition of the markets and submitted recommendations for their improvements. As a result provision was recommended to be made in next year's estimates for the various improvements outlined in the Sanitary Superintendent's memorandum.

(i) FOODSTUFFS.

Table IV, No. 19, gives the quantities of foodstuffs examined and condemned. Meat inspection is carried out by the Veterinary Officers at the slaughter-house.

Foodstuffs other than meat are examined by the Sanitary Superintendent, and in cases of doubt by the Medical Officer of Health. Excluding meat, the total number of items examined by the Medical Officer of Health during the year was 2,724, of which 1,164 were condemned.

(j) COWSHEDS AND DAIRIES.

This year saw the installation of cattle removed from some of the town dairies to the new model cowsheds at Mji Mpia. Previous reports have dealt with the insanitary and unsatisfactory condition of the town dairies. It is impossible to deal with these and bring them up to the standard of modern Public Health requirements. They are sanitary blemishes and totally out of place in a crowded city. Fortunately, with the installation of the new water supply and the completion of the batch of sheds at Mji Mpia, it was found possible at the end of 1923 to rent the sheds to six Indian cattle owners, and so to close down some of the cowsheds in the town. With the erection of more sheds this year a further clearance may be expected and it is hoped that eventually it will be possible to prohibit entirely the keeping of cows in the town.

Contrary to expectation, no difficulty was experienced in inducing the cow owners to take up these sheds, but rather the demand exceeded the supply. On the whole the scheme has worked satisfactorily and less trouble than was expected has arisen. Some difficulty at first arose over the question of dipping. The owners strongly objected to dipping, as it was said to lessen the amount of milk, to cause slipping of calves, and anything else which occurred to the fertile brain of the owner. Finally, an ultimatum was given to the owners, and they were informed that they could choose between regular dipping and eviction, and it was pointed out to them that the sheds could easily be filled with the cattle of other applicants who would obey the regulations. They then recognised the inevitable and since then no trouble has been experienced as regards dipping. The system of drainage has not been satisfactory and is still giving rise to considerable trouble. Each shed is drained into a cesspool, which it

was hoped would absorb all water used in washing down the sheds. Unfortunately it has been found that the cesspools overflow daily and have to be baled out. The result is that streams of dirty water ultimately form a regular morass at the lowest part of the compound. To keep the sheds clean a considerable amount of water is required which the cesspools, despite the sandy and porous nature of the soil, are unable to absorb. To prevent undue waste the water supply is limited to certain hours of the day, but this does not prevent the daily overflowing of the cesspools. A system of drainage is necessary as the trouble will be intensified with the erection of new sheds this year. Such drainage has been sanctioned in the estimates for the coming year and it is hoped the difficulty will be solved, but the problem is not easy.

In the early part of the year it was decided to start, as an experiment, the sale of milk from these dairies to the general public. The whole scheme was placed under the Medical Officer of Health so that those of the public who desired it should be able to obtain a pure milk supply.

The milk was purchased in the first place by the Health Office from dairymen at the rate of 91 oz. per rupee. This somewhat odd rate was arrived at from the current price of milk in Zanzibar which is $3\frac{1}{2}$ bottles to the rupee, a bottle holding about 26 oz. As it was not desired to make a profit, but merely to prevent loss, this price enabled us to sell the milk at a price of four annas (4d.) per pint in a sealed hygienic bottle which was purchased by the customer. Delivery of the milk is taken at Mji Mpia and measurement effected by a milk-weighing machine.

A Sanitary Inspector is present at the morning and evening milking, and it is his duty to see that cows, milkers, and milking utensils are clean. He then takes the necessary supply of milk for the day and gives the owners receipts for the amount of milk supplied. The milk is then taken in sealed cans in a handcart to the Estella Market, where zinc-lined stalls fitted with sink and water supply have been prepared.

Here the milk is resold to purchasers, who themselves send for their supply as it is not possible with the staff at our disposal to make a house-to-house distribution.

Subjoined is a statement showing the amount of milk bought and sold each month from July, when the scheme was inaugurated, to the end of the year. From this it will be seen that each month there has been a certain turnover which has increased slightly. The monthly profit is, of course, not sufficient to cover overhead expenses, which include the whole time of a fourth grade inspector and three boys, but at any rate the experiment has not proved a source of financial loss to the Government. There is no doubt that this guaranteed milk supply has been a great boon to such of the public who have

availed themselves of it, and I think none would desire to go back to the old method of supply from a more or less unknown Indian vendor who supplies a mixture of stale milk and dirty water in varying proportions.

For European children especially it is of great use, as they are now able to get an ample supply of good milk, with a high fat content, of reasonable purity. The public availing themselves of the scheme is naturally limited to the European community and the better-class Indian and Arab, but were house-to-house distribution feasible considerable increase would, I think, follow. In future years it is to be hoped that all milk sold will have to pass through the Estella Market and not be allowed to be hawked direct from door to door. This will give greater control and therefore greater purity in the whole supply of milk to the general public, but at present legislative and other difficulties prevent this. As the number of sheds and cattle increase at Mji Mpia so, too, will probably a larger number of the public be affected; and it may be possible to reduce the price or institute house-to-house delivery. As the whole thing is in the nature of an experiment no extra staff have been engaged for the work which has fallen on the members of the Health Office staff.

Statement of milk purchased and sold from July to December 1924 :—

1924	Milk purchased.		Milk sold.	
	Rs.	Cts.	Rs.	Cts.
July	1,231	59	1,340	87
August	1,440	86	1,591	31
September	1,553	44	1,726	71
October	1,648	34	1,842	25
November	1,686	99	1,890	24
December	1,905	03	2,133	21
	<hr/>		<hr/>	
	9,466	25	10,524	59
	<hr/>		<hr/>	

4. *Poor and Leper Asylums.*

WALEZO POOR ASYLUM.

This is under the charge of the Roman Catholic Mission, and two sisters are detailed there for daily duty.

This asylum serves a very useful need. Not only are chronic and incurable cases taken in and cared for, but the place is largely resorted to by the natives of the surrounding district who apply to the sisters for treatment of all kinds of diseases and accidents. Out-patients attend daily in considerable numbers and such as it is deemed necessary to treat as in-patients are admitted. In addition to the usefulness of the work done for the poor and incurable cases, this asylum must also rank as by no means one of the least important out-station Dispensaries. Visits are paid at least once a week by a Medical Officer. The attached table shows the number of in-patients treated during the year.

TABLE M.

Particulars.	Males.	Females.	Total.
Remaining on 1st January, 1924	33	41	74
Admitted during the year	270	53	323
Died during the year	50	32	82
Discharged during the year	188	21	209
Discharged at own request	11	3	14
Remaining at the end of the year	54	38	92

LEPER SETTLEMENTS.

TABLE N.

The following table shows the number of lepers of each sex under segregation in the different settlements at the end of 1923 and 1924:—

Settlement	1924.			1923.		
	Males.	Females.	Total.	Males.	Females.	Total.
Funzi	37	36	73	27	37	64
Nduni	15	9	24	17	13	30
Pujini	22	22	44	25	22	47
Kengeja	12	12	24	12	13	25
Funguni	4	2	6	4	2	6
	—	—	—	—	—	—
Total	90	81	171	85	87	172
	—	—	—	—	—	—

During the past year 21 new cases of leprosy were discovered in Zanzibar Island and 20 cases in Pemba. Of these one escaped, one died before removal, 33 were sent to Funzi Island and six to the other settlements.

TABLE O.

The following table compares particulars concerning the Funzi Settlement with those of the previous year:—

Particulars.	1924.			1923.		
	Males.	Females.	Total.	Males.	Females.	Total.
Remaining on 1st January	27	37	64	31	44	75
Admitted during the year	23	10	33	19	12	31
Died during the year	10	5	15	15	21	36
Discharged during the year	—	—	—	1	1	2
Escaped during the year	4	5	9	3	1	4
Remaining on 31 December	37	36	73	27	37	64

The projected transfer of all lepers from the different settlements to Funzi Island awaits the provision of sufficient accommodation and improved conditions. The temporary houses on the island have proved unsatisfactory, and buildings of a more permanent character are to be erected during the coming year.

During February, Miss Philpot, who had volunteered her services through the Universities' Mission to Central Africa, arrived from England and commenced work among the lepers. Since her arrival she has made regular visits, latterly four times weekly to Funzi Island and twice weekly to the Nduni Settlement and, under the supervision of the Medical Officer, Weti, has begun the specific treatment of several patients with satisfactory results (*vide* Appendix V). Her visits are much welcomed by the patients and have done much to relieve the monotony of their existence and to improve their well-being and comfort in every way.

The lepers of the other settlements are, however, more cheerful and contented than those living under the stricter isolation which prevails at Funzi, and it is necessary that many of the required improvements detailed later (*vide* page 45) should be undertaken in the latter settlement before transfer is effected.

5. *Port Quarantine Service.*

It will be noticed (see attached tables) that the number of steamships arriving was slightly less than in 1923. This is due to the fact that certain small coasting steamers ceased to run.

Four mail steamers from Bombay arrived in Quarantine during the year, having developed cases of Small Pox on board between Bombay and Mombasa.

During the latter half of the year extensive repairs were carried out on the Island. The latrines of the central building (the old jail) which are built out over the sea, a most effective form of sewage disposal, were found to be unsafe. They were entirely rebuilt and are now very satisfactory. The roof of the main building, which forms a catchment area for the big tank in the centre, has also been reconstructed.

The accommodation at the Island is at present hardly sufficient for a heavy quarantine, and there is at times a good deal of overcrowding.

An outbreak of Small Pox in Mombasa in December rendered increased vigilance necessary over the passengers coming from that port. All passengers for Zanzibar were therefore inspected on board, their names and addresses taken, and they were required to report at the Health Office for vaccination if necessary.

TABLE P.

Return of Persons Quarantined in 1924.

	Remaining	Admitted	TOTAL	Discharged	Died	Remaining	Largest No. on one day	No. of days station occupied	Remarks.
January	365	...	365	365	...	...	365	16 days	
February	...	365	365	365	...	...	365	23 days	s.s. "Karoa"
April	...	450	560	459	1	...	460	10 days	s.s. "Khandalla"
May	...	355	355	355	...	...	455	8 days	s.s. "Karapara"
"	...	741	741	740	1	...	741	15 days	s.s. "Karagola"
Total	365	1,921	2,286	2,286	2	...	2,286		

TABLE Q.
Port Sanitation Return, 1924.

	Arrivals.			Ships quarantined.	Ships claytonised.	Passengers landed.	Passengers under surveillance.	Number of persons vaccinated.	Persons placed in quarantine
	British.	Foreign.	Total.						
<i>Steamers—</i>									
January	20	17	31	..	..	1,619	..	145	..
February	20	6	26	1	1	1,735	..	..	365
March	20	12	32	..	..	2,038	..	..	..
April	18	11	29	1	1	1,735	..	210	460
May	25	9	34	2	2	2,086	..	384	1,096
June	21	9	30	..	..	1,548	4	..	..
July	18	12	30	..	..	1,320	..	..	..
August	23	10	33	..	..	1,814	..	..	..
September	22	11	33	..	..	1,439	..	..	..
October	22	9	31	..	..	1,831	..	..	..
November	21	13	34	..	..	1,483	..	..	..
Décember	26	8	34	..	..	1,755	..	..	..
<i>Men of War</i>	2	2	4	..	..	..	..	..	..
Total ..	258	123	381	4	4	20,403	4	739	1,921
Total for 1923 ..	304	117	421	2	36	20,634	325	..	969

TABLE Q.—(Continued.)

Port Sanitation Return, 1924.

	Arrivals.			Ships quarantined.	Ships claytonised.	Passengers landed.	Passengers under surveillance.	Number of persons vaccinated.	Persons placed in quarantine.
	British.	Foreign.	Total.						
<i>Dhows—</i>									
January ..	142	31	173	..	..	1,079	..	980	..
February ..	138	38	176	..	..	864	..	763	..
March ..	134	112	246	..	..	1,162	..	852	..
April ..	100	30	130	..	..	421	..	379	..
May ..	93	6	99	..	..	369	..	289	..
June ..	105	2	107	..	..	372	..	262	..
July ..	116	9	125	..	..	517	..	66	..
August ..	108	5	113	..	..	455	..	75	..
September ..	104	2	106	..	..	584	..	76	..
October ..	108	2	110	..	..	545	..	100	..
November ..	101	3	104	..	..	484	..	337	..
December ..	110	19	129	..	..	562	..	506	..
Total ..	1,359	259	1,618	..	..	7,414	..	4,685	..
Total for 1923 ..	1,460	344	1,804	4	4	8,123	..	7,382	39

6. *School Medical Service.*

Work during the year was confined to the boys of the Government School, as it was not found possible to spare the time for the other schools.

The school clinic was completed during the year, but has not yet been opened, as furniture and instruments are not yet to hand. It is hoped to have everything in order shortly, when this building should prove a real asset for school work.

Reference to the table attached shows that defective vision is common among all races examined. As this condition is probably as frequent in the other schools as in the Government schools it will be seen that there is considerable scope for refraction work and prescribing of glasses, and with the necessary dark room and instruments it is hoped that this can be undertaken by the Medical Officer in charge of the school work when a full staff is available.

In view of the remarks of the late Assistant Medical Officer of Health, Dr. Quin, in last year's report with regard to the girls' school, a lady Medical Officer who could undertake this work would be a great boon. This could be combined with ante-natal and child welfare work at the Ngambo Dispensary. Purdah women and school girls' who are more or less inaccessible to the male Medical Officer, would willingly seek advice from a lady and by this means infantile mortality and preventible sickness among women and children should be greatly diminished. Further references to the table attached bring out the following points:—

1. The largest number of boys examined were Arabs.
2. Taking the most important defects to be noted the percentage for the different races is as follows:—

	Indians.	Arabs.	Swahili and Others.
1 Lack of Cleanliness	12%	11.5%	2%
2 Defective Teeth	21%	23%	9%
3 Enlarged Tonsils	21%	9%	5%
4 Defective Vision	42%	23%	24%
5 Enlarged Spleen	33%	37%	28%
6 Parasitæmia	3%	6.8%	10%

Thus the Indian is again found to take pride of place, although only just, in the matter of lack of cleanliness. It is satisfactory to record, however, that since medical inspection was first instituted in 1921 the standard of cleanliness has greatly improved. When a general survey of all children is considered there is no doubt that the African native is the cleanest, sturdiest and generally the fittest. The Indian comes next and the Arabs as a rule are anæmic and of poor physique. Many of these Arabs come from Pemba or Zanzibar shambas and are thoroughly infected with Malaria and Ankylostomiasis which retards their physical development, as they have not the same resistance to these parasitic infections as the tougher and more im-

munised African. The out-district schools have not been inspected, but on one occasion the children at Mwera school, who are chiefly Arabs, were inspected and the general impression given was that they were a sorry anæmic lot. The spleen rate worked out at over 80% and the teacher stated that failure of attendance on account of sickness was high. Probably every child if examined would be found suffering from Ankylostomiasis in addition to Malaria. The Mwera district is probably one of the most unhealthy as well as one of the most fertile in the Island, but it is evident that the Arab after several generations has not yet been able to immunise himself against tropical parasites to the extent of the African. Still, if a group of white children were brought up under the conditions of these Mwera Arab children it is unlikely that one would reach maturity. Apart from preventable diseases, the physique and health of the children are greatly improved by games and physical exercises which seem almost as an important a function of the school as education itself.

SCHOOL DISPENSARY.

Minor ailments are treated by a Sub-Assistant Surgeon who attends daily. With the opening of the clinic it is hoped to extend the work of the dispensary and make it a real part of the School Medical Service.

The subjoined tables show the defects discovered and the number of cases treated.

TABLE R.

The following table shows the defects discovered:—

		Indians.	Arabs.	Swahilis.	Others.
Number examined	...	33	131	58	43
Nutrition Defective	...	5	15	5	4
Cleanliness—Skin Diseases	...	2	7	—	—
Head	...	1	6	—	—
Body	...	1	3	—	2
Vaccination—Unvaccinated	...	1	7	6	1
Nose and Throat	...	1	1	—	—
Teeth Defective	...	7	31	9	12
Tonsils	...	7	13	2	3
External Eye Disease	...	—	1	—	—
Vision—Defective	...	14	31	14	10
Ear Disease, Hearing Defective, Speech Defective, Mental Condition, Heart Circulation, Lungs, Nervous System	...	—	—	—	—
Rickets	...	1	4	—	1
Deformities	...	1	1	—	1
Lymphatic Glands	...	2	5	1	—
Spleen Enlarged	...	11	49	11	17
Other Disease or Defect	...	—	3	—	2
Blood—M.P. Present	...	1	9	6	4

TABLE S.

The subjoined table shows the ailments treated at the Dispensary in the Government School:—

Abscess	...	7	Orchitis	...	7
Boils	...	332	Rheumatism	...	11
Bronchial Catarrh	...	22	Ringworm	...	27
Burns	...	2	Scabies	...	4
Contusions	...	185	Whitlow	...	52
Constipation	...	37	Sprains	...	12
Diarrhœa	...	5	Ulcers	...	152
Dysentery	...	1	Minor Diseases	...	160
Eczema	...	11			—
Fever	...	42			1,114
Jiggers	...	45			—

SCHOOL BUILDINGS.

There is nothing to be added to the remarks in last year's report.

The Ismaili Khojas' School was inspected by the Director of Education and the Senior Medical Officer of Health and the bad condition of the girls' school confirmed. It is to be hoped that this wealthy and important sect will shortly build a school for their children on modern and up-to-date lines.

7. *Bacteriological and Public Health Laboratory.*

The work performed in the Laboratory during the year was considerable. The total number of examinations amounts to 7,926, an increase of 1,738 over the previous year. This is all routine work as, with the staff available, it is hardly possible to get through each day's work. Indeed, in order to complete all the necessary daily work it frequently happens that the Laboratory must be kept open after hours and on Sundays. The work is very varied including as it does protozoology, bacteriology, clinical analysis and general medico-legal work involving considerable responsibility.

I regret to have to report that the Junior Laboratory Assistant died during the year. Mr. Eugene de Silva had worked in the Laboratory since 1912 and was thoroughly reliable and capable. He was admitted to the Hospital on June 10th, and died on June 23rd, 1924.

The appointment of a second Medical Officer to undertake Port Health work will be welcome, as one or other Medical Officer in the Public Health Service will then be able to devote a portion of his time to Laboratory work.

The attached table shows the work of the Laboratory during the year.

TABLE T.
Bacteriological Laboratory Return for the year 1924.

BLOOD.			SPUTUM.		URINE.			
Total:—1491 + 158.*	Positive.	Negative.	Total:—198.	Positive.	Negative.	Total:—191.	Positive.	Negative.
Filaria	...	17	Tubercle Bacilli	62	119	Sugar	...	1
Spirochaeta Obermeyer	...	...	Pneumococci	5	1	Albumin	...	38
Kala Azar	...	...	Micrococci catarrhalis	6	...	Casts	...	38
Hæmaglobin	...	...	Cultural Examination for T.B. etc.	5	...	Bilharzia	...	35
Differential Counts	...	...	Others	...	...	Urea	...	...
Arneth Counts	...	...	Fæces.	Pos.	50	Catheteral Examination	...	39
Widal's Test for B. Typhosis	...	...	Total:—1,237.	Pos.	26	B. Coli	...	11
and Para A. and B., etc.	...	6	Amœbæ	5	297	Gonococci (Urethral Smears)	...	25
Wasserman's	...	33	Ankylostoma	788	18	Spermatozoa	...	1
Spirochaete Pallina	...	3	Ascaris	81	...	Blood and Pus	...	21
			Tænia	...	...	B. Pyocyaneus	...	1
			Bilharzia	3	2	Bile	...	18
			Other Parasites	...	...	
			Giardia Intestinalis	2	1			
	Q	Neg.	Pus	2	...			
			Blood	1	...			
			B. Shiga	1	1	Nasal Secretions.		
			Cultural Examination, for			Total:—36.		
			Typhosis and Para A. and B.					
			B. Flexner	...	7			
			Cholera Vibrio	...	1			
Malaria	215	150		...	...	Leprosy	...	20

REMARKS:—*Total Blood Examination of school children 158, out of this total 40 were Positive for Malaria (Undefined Parasites) and 118 were Negative.

TABLE T.—(Continued.)
Bacteriological Laboratory Return for the year 1924.

RAT EXAMINATION.			VACCINES.		CHEMICAL.	
Total:—4101.	Pos.	Neg.	Total:—14.	Number.	Total:—363.	Number.
B. pestis ...	...	4101	Staphylococci ...	1	Milk ...	47
Miscellaneous. 7.	Pos.	Neg.	Streptococci ...	...	Condensed Milk ...	26
			Gonococci ...	9	Water ...	88
			C. Coli ...	1	Foodstuffs (Matama) ...	1
			B. Shiga ...	...	Beverages (Syrups) ...	5
			B. Catarrhalis ...	...	Tinned Provisions ...	...
			Others Polyvalent ...	3	Mineral Waters ...	64
					Legal Cases ...	66
Von Pirquet's Test ...	...	1			Drugs ...	66
Pus Cultural Examination ...	6	...				
Semen Examination for Spermatozoa ...	1	3				
Ulcer Scraping for Spirochaeta Pallida ...	1	2				
Synovial fluid ...	1	...				
Scraping for B. Acne ...	1	...				
Pus Cultural Examination for Tubercle Bacilli ...	...	1				
Vaginal Discharge for Bacillus Pyocyaneus ...	...	3				
Ascitic fluid for general Ex- amination ...	...	1				
Urinary Calculus (formation of) Throat Swabs for Bacillus	1	...				
Diphtheria ...	...	2				
			Pathological Examination of Tissues Total 5.	Malignant.	Simple.	
				2	3	

8. *Control of Opium.*

The controlled issue of Opium to registered habitués in Zanzibar shows a decrease in number from 143 to 133 and a decrease in average monthly consumption of opium from 3 lbs. 40 grs. to 2 lbs. 12 ozs.

As most of the habitués are elderly persons who have consumed opium for many years, the diminution is naturally slow, and observations on these people during the last four years lead to the conclusion that the consumption of the drug in the quantity allowed is not harmful, and there is no doubt that these old people would suffer severely if deprived altogether or greatly restricted. For an elderly person suffering from chronic complaints such as Asthma, Bronchitis, Rheumatism, and other disabilities of the aged, there seems to be no doubt that the drug has a beneficial effect and renders them more contented with their lot and so perhaps life is prolonged. The great majority of those who apply for the drug consume it by swallowing and not smoking.

A certain amount of smuggling and illicit traffic in opium goes on, and excessive severity in dealing with habitués would only tend to drive the traffic into underground channels.

TABLE U.

The following table shows the races and sexes of those on the register at the close of 1924 compared to 1923:—

Races or Castes.	Males.	Females.	1924. Total.	1923. Total.
Ismaili Khoja	8	22	30	31
Suni-Mohammedan	22	8	30	31
Ithnasheri Khoja	5	4	9	10
Hindu	4	—	4	5
Baluchi	2	—	2	2
Swahili	34	3	37	41
Arab	16	—	16	18
Persian	1	—	1	1
Shihiri	1	—	1	1
Comoro	3	—	3	3
	<hr/> 96	<hr/> 37	<hr/> 133	<hr/> 143

B. MEASURE TAKEN TO SPREAD THE KNOWLEDGE OF
HYGIENE AND SANITATION.

In all Government Schools lectures and demonstrations on Hygiene, with particular reference to Tropical Diseases, are included as part of the Curriculum.

Elementary lectures on parasitic disease, together with field instruction, were given by the Economic Biologist to School Teachers and Police Sergeants.

The Sanitary Superintendent also gave elementary lectures on Hygiene to certain selected police.

C. RECOMMENDATIONS FOR FUTURE WORK.

These are included under general recommendations (Section VII).

B. SPEARMAN.

SECTION IV.

HOSPITALS AND DISPENSARIES.

Reference to the total number of out- and in-patients treated has already been made under Section II.

In-patients.

European Hospital, Zanzibar.—Seventy-two cases with one death were treated in this hospital during the year as compared with 83 cases and two deaths in 1923 and 80 cases with one death in 1922.

Asiatic and Native Hospitals.—In all hospitals throughout the Protectorate 2,483 cases were treated as compared with 2,674 in 1923 and 1,812 in 1922.

TABLE V.

The following table shows by stations the number of cases treated as in-patients during the past three years:

	1924.		1923.		1922.	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Zanzibar	1,118	65	1,506	57	1,471	68
Mkokotoni	74	2	54	2	38	—
Selem	31	—	14	—	—	—
Weti	490	23	516	8	792	4
Chake Chake	622	30	453	17	395	13
Mkoani	148	3	131	1	116	4
	—	—	—	—	—	—
Total	2,483	123	2,674	85	1,812	89
	—	—	—	—	—	—

Infectious Diseases Hospital.—Fifty-five cases with two deaths were treated during the year as against 264 cases with 60 deaths in 1923 and 182 cases with 54 deaths in 1922.

Operations.

During the year 188 major operations were performed at the Zanzibar Hospitals, 174 at Weti and 51 at Chake Chake. The numbers for 1923 were 339, 221 and 41 respectively.

The large reduction in cases admitted to, and operations performed at, the Zanzibar Hospital last year is no doubt solely attributable to the shortage of staff to which reference has already been made (*vide* pp. 2). Many patients were detained in hospital awaiting operation for long periods, and it eventually became necessary to refuse admission to all but the most urgent cases.

Buildings.

Statement of work carried out during 1924.

ZANZIBAR.	Rs.	Cts.
European Hospital, completion and improvement ...	2,705	58
Mortuary and Post Mortem Room, erection ...	7,180	20
Infectious Diseases Hospital, repairs ...	74	64
SELEM.		
Dispensary, extension of verandah ...	992	56
MBIJI.		
Dispensary and Dispenser's house, erection ...	1,500	00
MAHONDA.		
Alteration of existing building to provide dispensary ...	123	10
MANGAPWANI.		
Alterations of existing building to provide dispensary ...	105	15
KIZIMKAZI.		
Dispensary and Dispenser's house, erection (not completed) ...	1,000	00
WETI.		
Hospital extension and repairs ..	2,584	83
Total ...	16,266	06

SECTION V.

ZIWANI POLICE LINES.

The average number of Police accommodated in the Ziwani Lines during the year was 225.

At the Ziwani Hospital, 1,323 cases of illness were treated; 47 were admitted as in-patients, and three of these were transferred to Mnazi Moja Government Hospital.

There was one death from Acute Nephritis.

The principal causes of illness were Malaria, Constipation, Ulcers and Ankylostomiasis. There was no epidemic disease.

Anopheline and other mosquitoes were much less prevalent than in the past.

In addition to the Police, 83 women and 67 children received medical treatment. The chief diseases were Constipation, Ulcers and other Skin Diseases and Local Injuries.

One child died of Broncho-Pneumonia.

Central Prison.

At the end of 1923 there were 178 prisoners in the Central Gaol. During 1924, 617 were admitted, 642 were discharged and four died, leaving 149 prisoners at the end of the year. The daily average number was 184.

The total number of cases of illness treated at the Prison Infirmary during the year was 866, of these 191 were admitted as in-patients, 17 of whom were later transferred to Mnazi Moja Government Hospital. The average daily number in hospital was 6.65. There were four deaths; two died at the Prison Infirmary, one from Ankylostomiasis and Colitis and the other from Debility; two died at Mnazi Moja Hospital, one from Tuberculosis of the lung and the other from Ankylostomiasis.

The principal causes of illness were Malaria 41, Ankylostomiasis 219, Diseases of the Digestive System 214 (largely constipation) and Ulcers 79.

During the year mosquitoes have been much less prevalent in the Prison as a result of drainage and other sanitary measures carried out in the neighbourhood.

All excreta and garbage are burned.

No epidemic disease occurred; there was no true Dysentery, and very little Colitis. There were two cases of Tuberculosis of the lungs.

The diet appears to be satisfactory.

Lunatic Asylum.

	Males.	Females.	Total.
Patients remaining 31st December, 1923	17	8	25
„ admitted during 1924	18	5	23
„ discharged „	5	3	8
„ died „	11	3	14
„ remaining 31st December, 1924	18	8	26

The causes of deaths were recorded as:—

Senile Dementia	...	7	General Paralysis	...	2
Melancholia and Debility	...	3	Epilepsy and Debility	...	2

The urgent necessity for the provision of a real Mental Hospital was drawn attention to in last year's report and is again referred to on page 43 of this report.

SECTION VI.

EXTRA—DEPARTMENTAL.

(a) REGISTRATION OF MEDICAL PRACTITIONERS AND DENTISTS.

The Decree governing the registration of Medical Practitioners and Dentists came into force on 1st February, 1924.

The Board appointed for the purpose of the Decree consists of Principal Medical Officer (Chairman and Registrar), the Medical Officer of Health and one non-Government Medical Practitioner. Dr. Andrew Copland acted on the Board as the non-Government Practitioner until his departure from the Protectorate when the vacancy was filled by Dr. R. S. Taylor, who acted from the 25th February until the end of the year.

The Board met on nine occasions during the year and since the Decree came into force the following have been registered or licensed.

Registered Medical Practitioners	...	19
Registered Dentists	...	2
Licensed Medical Practitioners	...	8

Of the Registered and Licensed Practitioners nine and two respectively are private practitioners and the remainder in Government Service. Both Dentists are private practitioners.

(b) ZANZIBAR MATERNITY ASSOCIATION.

This Association is controlled by a Committee consisting of Government Officials and private persons, with the Principal Medical Officer as President. The Government contributes an annual grant to the Association, but the greater proportion of the considerable expenses incurred is met by private subscriptions and donations and by fees from patients who can afford to pay.

The Annual Report of the Association is appended (Appendix IV, page 101) and records most satisfactory progress during the past year.

SECTION VII.

RECOMMENDATIONS.

A RECOMMENDATIONS MADE IN THE 1923 REPORT AND ACTION TAKEN.

(a) *Medical Division.*

1. *Increase of Staff.*—Action taken—A Surgical Specialist, a Senior Medical Officer and one additional Medical Officer have been sanctioned but have not yet been appointed.

2. *Mental Hospital.*—Action taken—A suitable site has been selected and plans are to be prepared.

3. *District Dispensaries.*—Action taken—District Dispensaries have been opened during the year at Mbiji, Mahonda and Kengeja. At Kengeja a house is being used temporarily pending the erection of a Dispensary. A Dispensary is also under erection at Kizimkazi; it is hoped this will be completed within a few months. Sufficient funds have also been provided for the establishment of further dispensaries as soon as the work of erection can be undertaken.

4. *New Operation Theatre, Native Hospital.*—Action taken—Some difficulty has been experienced in selecting a suitable site. Meanwhile the old theatre has been improved by the erection of a roof sun-shade.

5. *Administration Offices.*—Action taken—Nil.

(b) *Sanitation Division.*

1. *Port Health and Quarantine Service.*—

(a) Increase of Staff.

(b) Additional accommodation at Quarantine Station.

Action taken—(a) An Assistant Medical Officer of Health and Assistant Storekeeper have been sanctioned, but have not yet been appointed. (b) Nil.

2. *Mosquito and Insect-Borne Diseases.*—

(a) Mosquito survey of Zanzibar

(b) Swamp drainage

(c) Cesspits

(d) Wells

(e) Increased Staff of Mosquito Inspectors

(f) Propaganda

Action taken—(a) The Economic Biologist has been engaged on this work for the greater part of the year and hopes to submit his report within a few months.

(b) Much progress has been made (*vide* Economic Biologist's Report, page 89) and funds have been provided for further work during the coming year.

(c) This most difficult problem is under consideration in connection with a campaign against Ankylostomiasis.

(d) Provision has been made for the installation of more hydrants, which it is hoped will enable a certain number of wells to be closed.

(e) Five additional Mosquito Inspectors have been appointed.

(f) A cinema film of the Rockefeller Institute for exhibition in the town cinema and a magic lantern for propaganda work in the district have been ordered. A pamphlet on the treatment of Malaria has been distributed to Officials.

3. *Infectious Diseases.*—

(a) Leprosy.—Funzi Island Settlement.

(i) Resident Medical Officer

(ii) Improved accommodation

Action taken—(i) Nil. (ii) Provision has been made for the erection of buildings of a more permanent structure to be commenced during the coming year.

(b) Tuberculosis.

(i) Hospital accommodation

(ii) Town Improvements

Action taken—(i) Nil. (ii) Many improvements of Dwellings have been effected during the past year by means of Sanitary Notices. Improvements on a large scale, however, must await the General Town-Planning Scheme now under consideration. A new Township Decree is in the course of preparation by which it is hoped that the powers of the Health Authorities will be strengthened and enable them to deal with matters now outside their control.

4. *Helminthic Diseases.*—

(a) Ankylostomiasis

(b) Bilharziasis

Action taken—(a) Proposals have been submitted with a view to commencing an intensive campaign. (1) A cinema film of the Rockefeller Institute has been ordered and on arrival will be exhibited in the town cinema.

(b) A circular was issued asking for the personal history of all patients suffering from this disease with the object of determining endemic centres.

5. *Infectious Diseases Hospital.*—Action taken—A suitable site has been selected in the grounds of the old palace at Marhubi, about three miles from the town. Plans are to be prepared and the erection undertaken as soon as possible.

6. *Water Supply.*—Action taken—Provision has been made for an increased number of hydrants.

7. *Milk Supply.*—Action taken—Shortly after the opening of the new Government Dairies a pure Milk supply scheme was commenced on a small scale (*vide* page 23).

8. *Native Dwellings*.—Action taken—Nil.

9. *Public Latrines*.—Action taken—Provision has been made for the erection of three latrines during the coming year.

10. *Goat Lairies*.—Action taken—Nil.

11. *Township Authorities*.—Action taken—Under consideration.

12. *Travelling Facilities*.—Action taken—The shipping companies and the Governments of Kenya and Tanganyika Territory have been approached with a view to obtaining concessions, but so far without any satisfactory result.

13. *Lectures and Demonstrations*.—Action taken—Lectures and demonstrations have been given during the year to School Teachers, Police and other Asiatics and natives.

14. *General Measures*.—Appointment of European Sanitary Inspectors. Action taken—Nil.

CHAKE CHAKE.

15. *Water Supply*.—Action taken—The cleared area surrounding the spring has been extended and further observations are being undertaken.

16. *Public Latrines and Urinals*.—Action taken—Nil.

17. *Incinerator*.—Action taken—To be supplied by the transfer of a small Horsfall Incinerator from Zanzibar.

18. *Mosquito-Proofing of Water Tanks*.—Action taken—Funds have been provided for this to be done during the coming year.

19. *Swamp Drainage*.—Action taken—As a temporary measure, further channels have been cut in the swamp below the European Quarters and have effected a considerable improvement.

WETI.

20. *Store for Leper Rations*.—Action taken—Nil.

MKOANI.

21. *Accommodation for suspected cases of Leprosy and other Infectious Diseases*.—Action taken—Nil.

B. RECOMMENDATIONS FOR 1925.

1. INCREASE OF STAFF.

(a) *Medical Officers*.—The increase sanctioned is still insufficient to allow seven, the minimum number necessary to undertake the ordinary routine medical work, to be constantly in the Protectorate.

(b) *Lady Assistant Medical Officer of Health*.—A lady Medical Officer of Health would be of great value for ante- and post-natal,

school inspection and child-welfare work. She would also be able to undertake the general sanitary inspection of houses where purdah conventions are observed.

(c) *Nursing Sister*.—An additional Nursing Sister is required to enable one to be stationed at Chake Chake.

(d) *European Sanitary Inspectors*.—For a town the size of Zanzibar at least two European Sanitary Inspectors should be available to assist the Sanitary Superintendent. At present there is no one to undertake the duties of the latter while absent on leave.

Several of the Asiatic Staff of exceptional ability and whose services, owing to long experience, have become very valuable are now due for retirement. It is therefore of especial urgency that European Inspectors should be appointed, if only as a temporary measure, to carry on the work and train a new native or Asiatic Staff up to the requisite standard.

(e) *Sub-Assistant Surgeons*.—Two additional Sub-Assistant Surgeons are necessary to provide for leave replacements and for one to be stationed at Chake Chake.

2. MENTAL HOSPITAL.

The provision of a Mental Hospital, which in last year's report was stated to be of pressing importance, has now become a matter of urgent necessity if only to obtain sufficient accommodation. To relieve the overcrowded condition of the Prison Asylum the female patients have for some months been accommodated in the grounds of the Infectious Diseases Hospital. Admission of cases of Infectious Disease, however, will necessitate their return to the Asylum and meanwhile the number of patients has increased.

3. DISTRICT DISPENSARIES.

To bring medical aid within the reach of all the inhabitants of the two islands 25 dispensaries are required. Of these nine have already been established and two are in process of erection. Some difficulty is experienced in obtainable suitable sites and carrying out the work of erection. Provision should be made to continue the erection of any not completed by the end of this year.

4. ADMINISTRATION OFFICES AND OUT-PATIENT BLOCK.

The necessity of the office of the Principal Medical Officer to be in the same building as the officers of the other Divisions under his control becomes more urgent. Not only is much valuable time wasted by officers, clerks and storekeepers passing to and fro, but the clerical work is considerably increased and the organization of office routine rendered difficult. The present office of the Principal Medical Officer is unsuitable and inconvenient in every respect and when vacated

should be altered and enlarged to form an urgently needed out-patient block, over which quarters could be provided at small cost for a resident dispenser. The present dispensary and out-patient rooms which are now too small for their purposes could be utilized as much needed additional wards for Asiatic and natives.

5. QUARANTINE STATION.

(a) *Accommodation*.—The additional accommodation recommended in last year's report is urgently required.

(b) *Luggage Store*.—A small building, in which the heavy luggage of passengers can be protected from the weather and pilfering, is necessary.

6. MOSQUITO AND INSECT-BORNE DISEASES.

In addition to the ordinary routine anti-malarial measures, attention is specially needed with regard to the following:—

(a) *Swamp Drainage*.—In Zanzibar Island a continuation of the work on the periphery of Zanzibar Town and the canalisation of the stream passing through Mkokotoni are the most pressing needs. In Pemba Island drainage is most necessary in the townships of Chake Chake, Weti and Mkoani.

(b) *Mosquito Brigades*.—A Mosquito Brigade, consisting of two Inspectors and two boys, is required at Chake Chake and one consisting of one Inspector and two boys at Weti.

(c) *Town Drains*.—An extension of the present system in Zanzibar Town and Chake Chake Township and the relaying or regrading of some of the existing drains is necessary.

(d) *Wells*.—Sufficient hydrants should be provided to enable all the wells in the town to be closed.

(e) *Mosque Ablution Tanks*.—These are a most prolific source of mosquitoes of all kinds and should be replaced by a pipe water supply.

(f) *Trench (matuta) Cultivation*.—The water holding furrows are a favourite breeding place for mosquitoes and this form of cultivation should be prohibited in the township or permitted only under the strictest supervision.

(g) *Coconut Trees*.—While not prepared at present to recommend the removal of existing coconut trees, I think the planting of new trees in the township should be prohibited until recent findings have been confirmed or refuted.

(h) *Roads and Streets*.—The repairs of many roads and streets in the town is urgently needed. Constant, expensive and not always successful supervision is necessary at present to guard against adventitious breeding pools.

7. INFECTIOUS DISEASES.

(a) *Leprosy*.—The leprosy problem in this Protectorate is a simple one compared with that of neighbouring dependencies if seriously taken in hand without delay. It is estimated that in addition to the 171 lepers now under segregation in the different settlements there are about 150 at liberty scattered throughout the two islands. With the opening of the district dispensaries it is expected that many of the latter will be collected, and in a few years the number to be accommodated in the settlement may reach three hundred. The maximum should be reached in from three to five years, and after that a steady decrease take place if adequate care and treatment be provided. The cost will be considerable, but will increase by postponement, and I think it can be confidently hoped that the result will be the complete stamping out of leprosy in the Protectorate. In any case, there will be prevention of much misery and suffering and the saving of many lives.

To attain these objects the requirements detailed below for the Funzi Island Settlement are necessary to improve the conditions with regard to specific treatment, food, clothing, housing and facilities for employment and recreation, so that cures may result and as cured cases are discharged their favourable reports may not only lessen the present tendency to concealment, but may shortly induce patients in the early curable stages of the disease with perhaps only subjective symptoms to apply voluntarily for treatment.

(i) *Resident Medical Officer*.—The specific treatment of Leprosy cannot in my opinion be satisfactorily undertaken except under the constant supervision of a doctor actually living on the island. He would also be able to take a sympathetic interest in the lepers individually, arrange suitable employment and recreation and see that they were properly cared for in every way.

(ii) *Residence for Nurses*.—The present arrangement by which Miss Philpot (see page 26) visits the settlement four days weekly is unsatisfactory not only for herself personally, owing to the fatigue and discomfort entailed by the journey, but also for the Government which is not able to avail itself to the full extent of her valuable services. Miss Philpot cannot live alone on the island, but the Universities' Mission states that when accommodation is provided there will be no difficulty in obtaining another lady as her companion and to assist in the work.

(iii) *Accommodation for Patients*.—When the permanent houses to be built this year are completed it is hoped that sufficient accommodation will have been provided to house all the lepers from the other settlements. Many of the patients, however, prefer a native type of house and, when able to erect it and keep it in repair, should be encouraged and given every assistance to do so. The permanent houses, for which provision has been made this year, may therefore

be sufficient to meet all future requirements if they can be reserved for new arrivals until able to erect their own dwellings and for patients incapacitated by disease or too old and feeble to look after themselves.

(iv) *Combined Dispensary, Treatment Room, Office and Store.*—This is urgently required. A small four-roomed building would suffice with a broad verandah for the use of patients awaiting treatment.

(v) *Cultivation and Live Stock.*—The Agricultural and Veterinary Departments will be asked to advise as to the best use to be made of areas not required or not suitable for building sites. Implements, seeds, plants, trees and a certain number of live stock should be provided.

In addition to the communal areas, a small plot of land should be allotted to each native house for a garden. With some preliminary assistance and European supervision it ought to be possible to make the settlement to some extent self supporting.

(vi) *Meeting House.*—This will be useful for many purposes such as religious services, magic-lantern demonstrations, entertainments, lectures, etc., and would also serve as a library and reading room.

(vii) *Recreation Ground.*—A suitable area should be set aside for this and all equipment provided.

(viii) *Water Supply.*—Although a sufficient well water supply is available, the water is at times slightly brackish, and sufficient tanks should be provided to collect all the rain from the roofs of any permanent building erected. The wells and water holes require attention and parapets should be constructed to prevent accidents.

(ix) At Weti a small building is required for stores pending shipment to Funzi Island.

(x) At Mkoani a small building is required to house lepers awaiting transfer.

(b) *Tuberculosis.*—(i) *Hospital Accommodation.*—The urgent need for the provision of accommodation for tuberculosis patients was drawn attention to in last year's report (page 40). (ii) *Town Improvements* (*vide* page 41).

8. HELMINTHIC DISEASES.

(a) *Ankylostomiasis.*—Details of the measures recommended to combat this disease are contained in proposals for an intensive campaign which have been submitted separately.

(b) *Bilharziasis.*—The returns furnished, containing the personal history of patients seeking treatment for this disease during the past year, appear to prove conclusively that several endemic centres exist throughout the two islands. As soon as possible the Economic Biologist will undertake further investigations to determine the carriers and the preventive measures necessary

9. WATER SUPPLY.

A continuation of the work sanctioned for the coming year is necessary until all the town wells can be closed.

10. MILK SUPPLY.

The present scheme has proved a great boon to many consumers of milk in the town. It does not, however, enable one to say that the general population of the town is receiving ample supplies of clean and cheap milk. This can only be gradually brought about either by enlarging the actual distributing station and enforcing all milk to pass through this or by establishing model dairies in the town.

11. NATIVE DWELLINGS.

(a) Acquisition and demolition of dilapidated and inflammable huts scattered throughout the stone-built portion of the town (*vide* 1923 Report, page 41).

(b) *Model Native Dwellings*.—The erection of a model native dwelling in each of the townships of Zanzibar, Chake Chake and Weti as a propaganda measure and to serve as a type would be of great value.

(c) *Improved Type of Latrine*.—For the same purpose it is proposed to provide latrines of an approved pattern for the houses occupied by native officials and headman of each village.

12. PUBLIC LATRINES

Two public latrines and urinals are required at Chake Chake.

13. GOAT LAIRIES.

The necessity for these was pointed out in last year's Report (*vide* page 21). The value of the benefits obtained will far outweigh the initial cost of construction and much, if not all, of the cost will in any case be recovered by the rents charged.

14. HYGIENIC AND SANITATION PROPAGANDA.

Much more propaganda work is required both in the town and district and will be undertaken as soon as the staff permits. Cinema films of the Rockefeller Institute for town and a magic-lantern for district work have been ordered, and it is hoped that it will be possible to commence exhibitions within a few months.

Every endeavour should be made to continue and widen the scope of the lectures and demonstrations given to the Police, School Teachers and other Asiatics and natives. Both the Police and School Teachers are liable to be transferred from district to district throughout

the Protectorate, and any sanitary knowledge they may obtain will prove of the greatest value and serve as an introduction to district propaganda work.

15. TRAVELLING FACILITIES TO THE HIGHLANDS OF KENYA AND

TANGANYIKA TERRITORY.

I am still of the opinion that the concession recommended (*vide* 1923 report, page 42) is a necessary and reasonable one, and submit that further means should be sought by which it may be obtained.

16. VARIOUS.

Weti.

(a) *Nursing Sister Quarters.*—The quarters at present allotted are inconveniently distant from the Hospital. Practicable quarters should be provided above the administrative block of the Hospital.

(b) *Additional Hospital Ward.*—The present accommodation for the patients is insufficient.

(c) *New Health Office.*—The corrugated iron shed now used for the purpose is too small and altogether unsuitable for office work.

Chake Chake.

(a) *Quarters for Sanitary Inspector.*—Suitable quarters, conveniently situated, cannot be rented.

(b) *Barbed-Wire Fence for the Infectious Diseases Hospital.*—Strict isolation cannot be enforced until a fence is provided.

Mkoani.

(a) *Hospital Ward for Female Patients.*—At present there is no accommodation for female patients.

(b) *Shelter for Out-Patients.*—This could be provided by broadening the verandah.

(c) *Health Office and Store.*—A small one-roomed building would suffice.

J. A. TAYLOR,

Principal Medical Officer.

TABLE I.

Return showing the European and Principal Members of the Medical Department.

(a) European Staff.

Name.	Rank of Appointment.	Were Stationed on 31st Dec., 1923.	Remarks.
J. A. Taylor ..	Principal Medical Officer..	Zanzibar ..	Temporary.
P. L. L. Craig ..	Medical Officer ..	Chake ..	
D. S. Scott ..	" ..	Weti ..	
W. A. Young ..	" ..	Zanzibar ..	
T. A. Austin ..	" ..	" ..	
Miss A. E. Chambers ..	Matron ..	On leave ..	
.. M. Gittins ..	Nursing Sister ..	" ..	
.. G. M. Rainey ..	" ..	Zanzibar ..	
.. I. Pegg ..	" ..	" ..	
.. A. S. Milne ..	" ..	Weti ..	
.. T. Grant ..	" ..	Zanzibar ..	
.. V. I. Dargan ..	" ..	" ..	
B. Spearman ..	Senior Medical Officer of Health.	" ..	
H. C. E. Quin ..	Assistant Medical Officer of Health.	On leave ..	
P. Cairns ..	Sanitary Superintendent..	Zanzibar ..	
W. M. Aders ..	Economic Biologist ..	" ..	

(b) Return showing the Principal Members of the Subordinate Staff.

Name,	Rank,	Were Stationed on 31st Dec., 1924.	Remarks.
K. V. Joshi ..	Sub-Assistant Surgeon ..	Zanzibar ..	Infectious Diseases Hospital & Quarantine Station.
C. D. Rana ..	" ..	Mkokotoni ..	
M. L. Mehta ..	" ..	Mkoani ..	
M. V. Vaidya ..	" ..	Ziwani ..	
S. Livingstone ..	Dispenser ..	Zanzibar ..	
J. F. de Cruz ..	" ..	Weti ..	
C. Almeida ..	" ..	On leave ..	
I. B. Martin ..	Chief Clerk & Storekeeper ..	Zanzibar ..	
S. R. Fernandes ..	Clerk and Storekeeper ..	Chake ..	
F. de Souza ..	Chief Sanitary Inspector ..	Zanzibar ..	
F. P. Paul ..	Sub-assistant Surgeon ..	" ..	
Vrijlal M. Pandit ..	" ..	" ..	
Diwan Singh ..	" ..	" ..	
A. J. Raval ..	Head Vaccinator ..	On leave ..	
R. B. de Souza ..	Inspector ..	Zanzibar ..	
Jadowji K. Gohel ..	" ..	Chake ..	
J. M. No onha ..	Clerk ..	Zanzibar ..	
Lalchand B. Dedi ..	Storekeeper ..	" ..	
A. G. Kark ..	Laboratory Assistant ..	" ..	
Shah Mahomed Khan ..	Veterinary Officer ..	" ..	
R. Das ..	Asst. Veterinary Officer ..	" ..	

TABLE II.

FINANCIAL.

	Estimates.			Actual Expenditure or Revenue.		
	£.	s.	d.	£.	s.	d.
I. PERSONAL EMOLUMENTS.						
1. <i>Administrative.</i>						
Principal Medical Officer, Medical Storekeeper, Clerical Staff, Messengers, House and Pemba Allowances	...	1,680	0 0	1,680	0 0	
2. <i>Medical Division.</i>						
Senior Medical Officer, Medical Officers, Nurses, Sub-Assistant Surgeons, Dispensers, Native Attendants (Hospitals, Asylum, etc.), Bonus to Medical Officers, Anæsthetic, House and Prison Allowances	...	10,618	0 0	10,130	17 7	
3. <i>Sanitation, Veterinary, and Biological Divisions.</i>						
Senior Medical Officer of Health, Assistant Medical Officer of Health, Sanitary Superintendent, Economic Biologist, Allowance to Missionary Lady Assistant at Leper Settlement, Veterinary Officers, Laboratory Assistant, Sub-Assistant Surgeons, Sanitary Inspectors, Vaccinators, Mosquito Inspectors, Clerical Staff, Storekeeper, Caretakers, Native Attendants, Scavengers, House and Acting Allowances	...	15,700	0 0	15,195	8 8	
Total			£ 27,998 0 0	26,979 6 3		
II. OTHER CHARGES.						
<i>Medical Division.</i>						
Medical and Surgical Stores, Incidental and Travelling Expenses, Maintenance of Hospital, and Dispensaries, Electric Lighting, and Passages	4,253	0 0		4,548	15 0	
<i>Sanitation, Veterinary, and Biological Divisions.</i>						
Incidental Expenses, Stores, Laboratory, Main- tenance of Swamps and Drainages, Passages, Purchase of Opium, Maintenance of Patients in Infectious Diseases Hospital, Travelling Ex- penses, Maintenance of Veterinary Division, Clothing for Attendants, Maintenance of Biological Division	...	5,260	0 0	5,229	5 6*	
Total			£ 9,513 0 0	9,778 0 6		
III. SPECIAL EXPENDITURE.						
Experimental Animals, Purchase of Utensils for Milk, and Surgical Course of Medical Officer	...	82	0 0	36	4 10	
IV. REVENUE.						
Hospital and Dispensary Fees	...	800	0 0	682	16 9	

* This sum includes £1,150/8/4 spent on account of the outbreak of Rinderpest in the Protectorate.

TABLE III.

(1) NATIVE POPULATION OF ZANZIBAR AND PEMBA—CENSUS, 1924.

	Males.	Females.	Children.	Total.
ZANZIBAR.				
Zanzibar Town	12,696	10,777	3,026	26,499
Northern District	12,892	12,707	10,004	35,603
Southern District	20,462	21,939	10,513	52,914
	<hr/>	<hr/>	<hr/>	<hr/>
Total	46,050	45,423	23,543	115,016
	<hr/>	<hr/>	<hr/>	<hr/>
PEMBA.				
Chake Chake	11,072	10,715	8,954	30,741
Weti	13,072	12,575	9,182	34,829
Mkoani	8,061	7,611	6,407	22,079
	<hr/>	<hr/>	<hr/>	<hr/>
Total	32,205	30,901	24,543	87,649
	<hr/>	<hr/>	<hr/>	<hr/>
Grand Total	78,255	76,324	48,068	202,665
	<hr/>	<hr/>	<hr/>	<hr/>

TOTAL POPULATION OF THE PROTECTORATE.

ZANZIBAR ISLAND.

Native Population based on Census, 1924	...	115,016
Non-Native Population based on Census, 1921	...	13,083
		<hr/>
		128,099

PEMBA ISLAND.

Native Population based on Census, 1924	...	87,649
Non-Native Population based on Census, 1921	...	1,042
		<hr/>
		88,691
		<hr/>
Total Population		216,790
		<hr/>

TABLE III.—(Continued.)

(2) BIRTHS REGISTERED IN THE ISLAND OF ZANZIBAR, 1915-1924.

	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924
Town Area	332	296	305	418	341	473	479	481	413	501
Mkokotoni District	1,023	1,099	1,559	930	720	1,573	986	1,090	785	1,064
Mwera District	426	490	430	479	313	313	513	459	282	301
Chwaka District	458	469	392	384	402	600	613	628	555	768
Total	2,239	2,354	2,686	2,211	1,776	2,959	2,591	2,658	2,035	2,634

(3) DEATHS REGISTERED IN THE ISLAND OF ZANZIBAR DURING THE YEARS
1915-1924.

	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924
Town	1,008	1,168	1,255	1,359	1,180	1,083	1,076	1,262	1,258	1,043
Mkokotoni District	1,005	881	947	1,109	859	800	893	888	1,009	749
Mwera District	829	814	844	955	718	719	780	803	705	476
Chwaka District	378	394	444	451	402	439	512	504	482	564
Total	3,220	3,257	3,490	3,874	3,159	3,041	3,261	3,457	3,454	2,832

(4) COMPARATIVE STATEMENT OF BIRTHS AND DEATHS IN THE ISLAND OF
ZANZIBAR 1915-1924.

	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924
Town Area										
Births	332	296	305	418	341	473	479	481	413	501
Deaths	1,008	1,168	1,255	1,359	1,180	1,083	1,076	1,262	1,258	1,043
Districts.										
Births	1,907	2,058	2,381	1,793	1,435	2,713	2,112	2,177	1,622	2,133
Deaths	2,212	2,089	2,235	2,515	1,983	1,958	2,185	2,195	2,196	1,789

TABLE III.—(Continued.)

(5) COMPARATIVE STATEMENT OF BIRTHS AND DEATHS REGISTERED IN THE ISLAND OF PEMBA 1922-1924.

District.	BIRTHS.			DEATHS.		
	1922	1923	1924	1922	1923	1924
Chake Chake	625	485	565	328	366	476
Weti	467	350	376	491	621	461
Mkoani	575	319	340	397	302	342
Total	1,667	1,154	1,281	1,216	1,289	1,279

(6) BIRTHS—ZANZIBAR TOWNSHIP.

(a) The total number of births registered in the Town of Zanzibar during the year 1924, was as follows:—

Births registered	... 501
Still-born	... 50
Total	551

(b) Nationalities of births:—

Ithnasheri	... 86	Arab	... 46
Hindu	... 79	Comorian	... 11
Ismaili	... 69	Shihiri	... 7
Bohora	... 41	Manyama	... 4
Goan	... 39	Yaos	... 2
Memon	... 11	Zaramu	... 2
Parsee	... 10	Myassa	... 1
Persian	... 7	Mnyamwezi	... 1
Baluchi	... 2	Other African	... 13
Seychellian	... 2	European	... 10
Other Indian	... 26		
Swahili	... 32		
		Total	501

(c) Nationalities of Still-born:—

Ithnasheri	... 11	Arab	... 6
Ismaili	... 9	Swahili	... 3
Hindu	... 7	Comorian	... 2
Baluchi	... 2	Shihiri	... 2
Other Indian	... 6	Other African	... 2
		Total	50

TABLE III.—(Continued.)

(c) Return of Causes of Deaths in Zanzibar Town during 1924.

Diseases			REPORTED BY		Total.
			Qualified Practitioners.	Unqualified Persons.	
INFECTIVE DISEASES.					
Dysentery	...	...	5	7	12
Enteric	...	...	3	...	3
Gonorrhœa	...	...	...	3	3
Influenza	...	...	2	...	2
Leprosy	...	...	1	...	1
Malaria	...	...	32	117	149
Chronic Malaria	...	...	5	1	6
Pneumonia	...	...	7	30	37
Septicæmia	...	...	4	4	8
Small-pox	...	...	1	...	1
Syphilis	...	...	4	17	21
Tetanus	...	...	1	...	1
Tuberculosis	...	...	30	137	167
GENERAL DISEASES.					
Anæmia	...	...	2	14	16
Diabetes	...	...	2	...	2
Rickets	...	...	...	1	1
Debility	...	...	7	269	272
Debility-Infantile...	...	...	...	1	1
Rheumatism	...	...	...	22	22
Other Diseases	...	...	3	...	3
LOCAL DISEASES.					
<i>Diseases of the Nervous System.</i>					
Sub-Section 1.					
Nenribis	...	...	...	1	1
Meningitis	...	...	3	...	3
Encephalitis	...	...	1	...	1
Abscess of Brain	...	...	...	1	1
Congestion of Brain	...	...	4	...	4
Other Diseases	...	...	6	...	6
Sub-Section 2.					
Paralysis	...	...	5	7	12
Epilepsy	...	...	1	...	1
Other Diseases	...	...	10	14	24
Carried forward			113	646	785

TABLE III.—(Continued.)

(c) Return of Causes of Deaths in Zanzibar Town during 1924.—
(Continued.)

Diseases.	REPORTED BY		Total.
	Qualified Practitioners.	Unqualified Persons.	
Brought forward ...	113	646	785
LOCAL DISEASES—(continueds).			
<i>Diseases of the Circulatory System.</i>			
Endocarditis ...	5	...	5
Valvural, Mitral ...	21	2	23
Arterial Sclerosis ...	1	...	1
<i>Diseases of the Respiratory System.</i>			
Bronchitis ...	11	31	42
Broncho-Pneumonia ...	14	13	27
Gangrene ...	2	...	2
Asthma ...	...	7	7
Other Diseases ...	1	...	1
<i>Diseases of the Digestive System.</i>			
Gastritis ...	1	...	1
Stricture of Stomach ...	2	3	5
Dyspepsia ...	4	1	5
Appendicitis ...	...	1	1
Hernia ...	1	2	3
Diarrhoea ...	6	12	18
Constipation ...	...	6	6
Cirrhosis Liver ...	1	3	4
Jaundice ...	1	...	1
Peritonitis ...	5	...	5
Ascites ...	...	4	4
Other Diseases ...	9	1	10
<i>Diseases of the Urinary System.</i>			
Nephritis ...	2	6	8
Nephritis Chronic ...	4	...	4
Hæmaturia Bilharzia ...	4	...	4
Other Diseases ...	1	...	1
Carried forward ...	284	898	1182

TABLE III.—(Continued.)

(c) Return of Causes of Deaths in Zanzibar Town during 1924.—
(Continued.)

Diseases.	REPORTED BY		Total.
	Qualified Practitioners.	Unqualified Persons.	
Brought forward ...	284	898	1182
LOCAL DISEASES—(continued).			
<i>Diseases of Female Organs of Generation.</i>			
Abortion ...	1	1	2
Postpartum Haemorrhage ...	3	...	3
Puerperal Septicæmia ...	1	...	1
Abscess of Breast ...	...	3	3
Other Diseases ...	1	...	1
<i>Diseases of Connective Tissues.</i>			
Cellulitis ...	1	...	1
Elephantiasis ...	1	3	4
Abscess ...	...	3	3
<i>Disease of the Skin.</i>			
Ulcers ...	...	1	1
Injuries General ...	4	...	4
„ Local ...	7	...	7
Surgical Operations ...	1	...	1
Tumours-Malignant ...	3	...	3
Filariasis ...	1	...	1
Ankylostomiasis ..	10	13	23
Other Diseases ...	4	...	4
Premature Births ...	...	8	8
Total ...	273	770	1043

TABLE III.—(Continued.)

(7) DEATHS—ZANZIBAR TOWNSHIP.

(a) The total number of deaths registered in the Town of Zanzibar during the year 1924, was as follows:—

Males	...	545
Females	...	498
		<hr/>
Total		1,043
		<hr/>

(b) Races of the deceased:—

Ismaili	...	66	Comorian	...	64
Ithnasheri	...	38	Shihiri	...	24
Hindu	...	36	Mnyamwezi	...	20
Memon	...	21	Myassa	...	13
Bohora	...	17	Yaos	...	9
Goan	...	7	Kikuyu	...	5
Baluchi	...	6	Manyama	...	5
Persian	...	3	Zaramu	...	3
Mohammedan Indian	...	24	Other African	...	46
Other Indian	...	18	European	...	3
Swahili	...	518	Unknown	...	1
Arab	...	96			
					<hr/>
			Total		1,043
					<hr/>

TABLE IV.

Summary of Routine Sanitary Work done during the year in the Town of Zanzibar, for the year ending 31st December, 1924.

	Approximate Area.	Number of proclaimed open spaces.
1923	1,400 Acres	One
1924	1,400 Acres	One

2.—POPULATION.

	No. of Natives Approximately.	No. of Asiatics Approximately.	No. of Europeans Approximately.	Total Approximately.
1923	26,000	12,000	250	38,250
1924	26,499	11,964	250	38,713

TABLE IV.—(Continued.)

Summary of Routine Sanitary Work done during the year in the Town of Zanzibar, for the year ending 31st December, 1924.

3.—HOUSING.

	Total No of Houses.	No. occupied by Europeans.	No. occupied by Natives and Asiatics.	No. of Huts.
1923	3,280	77	3,203	7,196
1924	3,307	79	3,229	7,530

4.—MOSQUITO PROTECTION OF HOUSES.

	1923	1924
No. of European houses wholly mosquito-protected ...	2	2
No. of European houses with mosquito room ...	Nil	Nil
No. rendered during the year wholly mosquito-protected ...	"	"
No. rendered during the year partially mosquito-protected ...	"	"

5.—ERECTION OF NEW BUILDINGS DURING THE YEAR.

	1923	1924
No. of public buildings erected with sanction as to site, construction and relation to other buildings ...	11	1
No. of houses erected with sanction as to site, construction and relation to other buildings ...	41	27
No. of huts erected with sanction as to site, construction and relation to other buildings ...	Nil	Nil
No. of houses built without sanction ...	29	27
No. of huts built without sanction ...	390	334

ACTION TAKEN.

	Number of Prosecutions.		Number Demolished.	
	Huts.	Houses.	Huts.	Houses.
1923	Nil	2	Nil	Nil
1924	Nil	17	3	15

TABLE IV.—(Continued.)

Summary of Routine Sanitary Work done during the year in the Town of Zanzibar, for the year ending 31st December, 1924.

6.—MARKETS.

	Total Number.	Number paved and drained.	Number unpaved.
1923	4	4	...
1924	...	...	...

7.—SLAUGHTER-HOUSES.

	Total Number.	Number paved and drained.	Number unpaved.
1923	1	1	...
1924	...	...	...

8.—LATRINES.

	For Males.				For Females.			
	No.		No. of Seats.		No.		No. of Seats.	
	1923	1924	1923	1924	1923	1924	1923	1924
No. of public latrines :— ..	2	2	10	10	2	2	6	6
No. of new public latrines erected during the year ..	..	..	..	..	..	..	..	..
No. of public latrines demolished during the year ..	..	..	..	..	..	..	..	..

	1923	1924
No. of private latrines ...	30	30
Average number of pails of night-soil daily removed...	30	30
Average number of soiled pails removed and clean pails substituted ...	30	30
No. of night-soil men employed to clean latrines and to remove excreta ...	...	4
No. of cesspools (Approximately)...	5,000	5,300
No. of new cesspools constructed during the year ...	...	167
No. of old cesspools abolished ...	...	11
No. of cesspools oiled regularly by Department ...	530	536
No. of cesspools cleaned ...	211	381

TABLE IV.—(Continued.)

Summary of Routine Sanitary Work done during the year in the Town of Zanzibar, for the year ending 31st December, 1924.

9.—REMOVAL OF REFUSE.

	1923	1924
No. of dustbins (Public) ...	116	37
No. of dustines (Private) ...	...	437
No. of carts at work daily to remove refuse from the streets, yards and premises ...	46	46
Amount of refuse removed daily (Cartloads) ...	138	118
No of men employed for removing refuse ...	191	191

10.—MODE OF DISPOSAL OF EXCRETA, REFUSE AND OFFAL.

	Daily average No. of pails of excreta.		Daily average No. of cartloads of refuse.		Daily average No. of cartloads of slaughter house and market offal.	
	1923	1924	1923	1924	1923	1924
Buried or trenched ...	...	...	...	121	...	...
Burnt ...	...	...	138	106	2	2
Thrown into sea ...	30	30	...	...	...	...
Otherwise dealt with ...	...	...	...	...	...	...

11.—AVERAGE DAILY NO. OF CARTLOADS OF CANS, BOTTLES, BROKEN CROCKERY AND OTHER INCOMBUSTIBLE MATERIAL REMOVED FROM STREETS HOUSES, HUTS AND COMPOUNDS.

1923	Cartloads.	Included in previous Table.
1924	"	16

TABLE IV.—(Continued.)

Summary of Routine Sanitary Work done during the year in the Town of Zanzibar, for the year ending 31st December, 1924.

12.—WATER SUPPLY.

	1923	1924
PIPE-BORNE WATER:—		
Source (river, lake or spring)	Spring	Spring
No. of linear yards	15,840	17,493
No. of standpipes along roads	34	34
No. of standpipes in compounds and houses ...	182	351
WELLS:—		
Public—		
Number	6	6
No. with pumps protected against surface water and mosquito-protected ...	...	...
Private—		
Number	91	89
No. with pumps protected against surface water and mosquito-protected ...	8	8
TANKS:—		
Public—		
No. underground ... ..	...	...
No. mosquito-protected and served by pumps	...	...
No. above ground... ..	...	...
No. mosquito-protected ... ..	...	...
No. of 400 gallons capacity or less ... ..	...	...
No. above 400 gallons ... ..	...	...
Private—		
No. underground	5	5
No. mosquito-protected	5	5
No. above ground	390	399
No. mosquito-protected	140	149
No. of 400 gallons capacity or less ...	No record	343
No. above 400 gallons ... ..	...	56
NATURE OF TANKS:—		
Wood ... ..	...	...
Iron	140	149
Concrete	250	250
BARRELS:—		
Number	2,860	2,869
No. mosquito-protected	1,139	1,148
No. unprotected	1,721	1,721

TABLE IV.—(Continued.)

Summary of Routine Sanitary Work done during the year in the Town of Zanzibar, for the year ending 31st December, 1924.

13.—DRAINAGE

	Public.		Private.	
	1923	1924	1923	1924
MASONRY DRAINS:—				
Linear yards of masonry drains ...	No record	No record	No record	No record
Linear yards repaired during the year ...	do.	do.	do.	120
Linear yards of new drains constructed during the year ...	1,040	342	do.	812
EARTH DRAINS OR DITCHES:—				
Linear yards of earth drains or ditches ...	5,280	5,280	do.	...
No. of linear yards of ditches cleansed and graded ...	10,560	14,560	do.	...
No. of linear yards of ditches dug ...	...	...	do.	...
Average frequency of clearing ditches of grass ...	4 times per year	4 times per year	4 times per year	4 times per year

14.—CLEARANCE OF UNDERGROWTH, LONG GRASS AND JUNGLE.

	1923	1924
No. of square yards of weeds, grass and vegetation cut and removed ...	39,061	77,440
Average frequency of clearance of rank vegetation on same area ...	4 times per year	4 times per year

TABLE IV.—(Continued.)

Summary of Routine Sanitary Work done during the year in the Town of Zanzibar, for the year ending 31st December, 1924.

15.—EXCAVATIONS AND LOW-LYING LAND.

	1923	1924
No. of pools and excavations ...	Numerous	Numerous
No. of excavations filled up ...	1	6
Amount of low-lying and marsh land raised and drained ...	7 acres	12 acres
No. of pools, marshes, etc., fish stocked ...	...	...
No. of cubic yards of material used for filling up pools and excavations ...	2,400	1,320
No. of persons fined for making new excavations ...	...	...
Average number of men daily employed in filling up pools, etc. ...	3	3

16.—OILING.

	1923	1924
No. of drains oiled ...	6	See No. 17
No. of pools and excavations oiled ...	Numerous	Numerous
No. of tanks and barrels oiled ...	do.	do.
No. of cesspools oiled weekly ...	533	536
Average number of men daily employed for oiling drains, pools and water-tanks or barrels ...	2	2

TABLE IV.—(Continued.)

Summary of Routine Sanitary Work done during the year in the Town of Zanzibar, for the year ending 31st December, 1924.

17.—INSPECTIONS AND PROSECUTIONS.

	1923.	1924.
No. of Sanitary Inspectors employed ...	7	4
Visits to private houses ...	4,315	2,817
„ eating houses ...	110	698
„ hotels and bars ...	No record	410
„ lodging houses ...	2,493	1,036
„ aerated water factories ...	30	240
„ bake houses ...	239	334
„ cowsheds ...	2,274	1,168
„ foodstalls ...	No record	1,262
„ godowns ...	1,822	1,209
„ markets ...	2,912	668
No. of notices served to remove insanitary conditions ...	1,060	1,984
No. of notices outstanding ...	20	4
No. of nuisances abated ...	620	5,045
No. of prosecutions instituted for not removing insanitary conditions ...	5	60
No. of convictions obtained for not removing insanitary conditions ...	5	19
No. of Mosquito Inspectors employed ...	7	7
No. of premises where mosquito larvæ found ...	257	556
No. of mosquito notices served ...	209	556
No. of mosquito notices outstanding ...	14	...
No. of mosquito nuisances abated ...	160	556
No. of prosecutions instituted for having mosquito larvæ on premises ...	...	8
No. of convictions obtained for not removing facilities for the breeding of mosquitoes ...	...	6
No. of houses cleaned out and disinfected ...	24	18
No. of drains cleaned out and disinfected ...	No record	5,813
Average frequency of cleansing public latrines and urinals ...	Daily	Twice daily
No. of cesspits cleansed ...	do.	do.
No. of wells closed ...	...	2
No. of ruins cleaned out ...	...	147
No. of cement concrete covers fitted to cesspools ...	...	680
No. of cattle troughs cleansed weekly ...	3	4
Lepers sent to Pemba ...	No record	9
Burials (Paupers) ...	do.	81

18.—RAT DESTRUCTION.

	1923.	1924.
Rats trapped ...	6,265	11,945
Rats purchased ...	3,210	4,486
No. of trappers employed ...	9	7

TABLE IV.—(Continued.)

Summary of Routine Sanitary Work done during the year in the Town of Zanzibar, for the year ending 31st December, 1924.

CLASSIFICATION OF RATS.

	Rattus Rattus.	Mus Morvegicus.	Fachyura Cærulea.	Mus Musealus.	Cricetomys gambianus.	Unclassified.
1923	No Record	No Record	No Record	No Record	No Record	No Record
1924	8,850	2,583	911	620	394	3,115

19.—FOOD INSPECTION.

	1913.	1924.
Samples Taken:—		
Aerated Water	...	44
Milk	...	39
Water	...	47
FOODSTUFFS EXAMINED.		
Sacks Onions	...	203
Cases of Chocolates	...	14
Sack Dates	...	1
Sacks Cereals	...	67
„ Rice	...	663
„ Matama	...	30
„ Moong	...	36
„ Ginger	...	2
„ Cassia	...	2
„ Almonds	...	2
„ Potatoes	...	101
Bottles Pickles	...	96
„ Grape Juice	...	35
Tins Provisions	...	338
FOODSTUFFS CONDEMNED.		
Aerated Water	...	1,848 (Bots).
Sacks Onions	...	200
Cases of Chocolates	...	14
Sack Dates	...	1
Sacks Rice	...	663
„ Matama	...	30
„ Moong	...	28
„ Ginger	...	2
„ Cassia	...	2
„ Almonds	...	2
„ Potatoes	...	101
Bottles Pickles	...	96
„ Grape Juice	...	35
Tins Provisions	...	338

TABLE V.
Monthly Rainfall Zanzibar Town, 1925—1924.

	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924	Average for 10 years
January	...	1.63	2.20	2.33	2.02	0.00	1.39	0.00	3.99	2.74	1.80
February	...	3.50	4.29	1.36	1.07	0.08	2.48	0.00	0.98	8.23	2.27
March	...	2.29	4.46	4.37	7.27	1.19	4.77	3.84	3.51	5.64	4.33
April	...	33.35	16.49	11.55	8.85	8.47	17.00	2.10	22.06	15.65	14.51
May	...	4.35	10.63	9.66	2.81	15.09	4.58	13.00	1.68	3.34	7.54
June	...	1.38	4.20	6.27	0.20	0.77	0.37	3.99	1.32	2.61	2.61
July	...	0.38	1.23	4.86	3.00	0.13	1.62	1.68	2.39	1.33	2.05
August	...	2.11	2.05	0.60	1.63	1.41	0.59	1.33	3.93	0.19	1.42
September	...	2.81	2.01	0.76	1.46	1.63	0.32	1.37	0.64	3.38	1.55
October	...	5.83	2.27	5.77	3.21	5.88	5.39	4.97	1.30	1.19	3.84
November	...	2.94	6.79	2.18	21.81	1.76	9.41	14.36	8.43	3.20	7.02
December	...	2.92	0.44	6.79	4.65	7.62	1.79	7.41	7.12	5.55	4.49
Total	...	63.49	57.06	56.50	47.98	44.03	49.71	54.05	57.35	53.05	53.43

TABLE V.—(Continued.)
Meteorological Observations, Zanzibar Town and Banani, Pemba, 1924

	ZANZIBAR TOWN.					BANANI, PEMBA.					
	Rainfall	Relative Humidity	TEMPERATURE			Rainfall	TEMPERATURE				
			Mean Maximum	Mean Minimum	Absolute Maximum		Absolute Minimum	Mean Maximum	Mean Minimum	Absolute Maximum	Absolute Minimum
January	2.74	71	88.0	80.4	91.7	78.1	3.30	88.5	79.3	92.0	78.0
February	8.23	75	88.0	79.4	91.3	71.8	4.33	89.5	79.9	91.5	75.0
March	5.64	76	87.6	79.7	90.1	76.2	9.15	88.8	79.3	92.0	70.0
April	15.65	76	85.1	77.4	89.5	71.9	19.43	86.5	78.1	91.0	73.0
May	3.34	81	84.7	76.4	87.1	71.3	10.02	85.0	77.4	89.0	74.0
June	2.61	82	82.0	74.2	83.9	69.3	7.97	83.4	75.4	86.0	74.5
July	1.33	77	81.2	72.8	83.9	70.9	1.54	83.0	74.1	84.0	73.0
August	0.19	76	82.3	73.3	84.2	71.4	2.00	83.3	73.9	85.5	73.0
September	3.38	73	83.2	73.6	85.5	71.9	0.38	84.8	74.7	87.0	73.5
October	1.19	71	84.3	75.7	87.2	73.9	0.52	86.2	76.0	89.0	74.0
November	3.20	70	86.0	77.4	88.2	75.2	8.94	86.5	77.2	89.0	74.0
December	5.55	73	86.0	79.3	90.2	77.2	7.58	87.9	79.0	91.5	77.0

TABLE VI. (a).

(1) Return of Diseases and Deaths (In and Out-patients) for the year 1924

(Non-Europeans Only).

Diseases.			Out-patients.	In-patients.	
			Total Cases Treated.	Admissions.	Deaths.
INFECTIVE DISEASES.					
Beri-Beri	..	..	3	3	..
Cerebro-Spinal Fever	..	..	..	..	..
Chicken Pox	..	..	8	6	..
Dengue	..	..	6	4	..
Dysentery	..	..	18	6	1
Erysipelas	..	..	2	2	1
Gonorrhœa	..	..	944	24	2
Influenza	..	..	132	27	4
Leprosy	..	..	41	21	1
Malaria—(a) Benign Tertian	..	..	1,258	131	..
(b) Quartan	..	..	14	6	..
(c) Sub-Tertian	..	..	1,580	102	3
(d) Chronic Malaria	..	..	111	4	..
(e) Blackwater Fever	..	..	4	3	1
Measles	..	..	19	11	..
Pneumonia	..	..	39	39	12
Septicæmia	..	..	3	3	2
Small Pox	..	..	10	10	1
Syphilis—(a) Primary	..	..	94	9	..
(b) Secondary	..	..	121	4	..
(c) Tertiary	..	..	22	4	..
(d) Inherited	..	..	..	..	..
Tetanus	..	..	1	1	1
Tuberculosis	..	..	131	50	10
Whooping Cough	..	..	7	..	..
Yaws	..	..	429	10	..
Mumps	..	..	3	..	..
Undefined Fever	..	..	311	93	..
Other Diseases	..	..	4	..	..
INTOXICATIONS.					
Alcoholism	..	..	..	..	..
Morphinism	..	..	1	1	..
Others	..	..	2	..	..
GENERAL DISEASES.					
Anæmia	..	..	706	3	..
Diabetes	..	..	6	1	1
Goitre	..	..	1	1	1
Hodkin's Diseases	..	..	1	..	..
Debility	..	..	390	34	4
Other Diseases	..	..	41	4	1
LOCAL DISEASES.					
<i>Diseases of the Nervous System.</i>					
Sub Section 1.					
Neuritis	..	..	21	1	..
Other Diseases	..	..	22	7	3
Sub-Section 2.					
Apoplexy	..	..	..	..	..
Paraplegia	..	..	12	12	..
Chorea	..	..	..	..	..
Carried forward			6,578	637	19

TABLE VI. (a).—(Continued.)

(1) Return of Diseases and Deaths (In and Out-patients) for the year 1924.

(Non-Europeans Only).

Diseases.			Out- patients.	In-patients.	
			Total Cases Treated.	Admis- sions.	Deaths.
Brought forward ..			6,578	637	49
LOCAL DISEASES—(Continued).					
Sub-Section 2.					
Hemiplegia	..	..	9	..	..
Epilepsy	..	..	4	4	1
Neuralgia	..	..	381	1	..
Hysteria	..	..	1	..	..
Neurasthenia	..	..	4	1	..
Headache	..	..	210	..	..
Other Diseases	..	..	10	3	1
Sub-Section 3.					
Mental Diseases.					
Idiocy	..	..	1	..	..
Mania	..	..	1	1	..
Dementia	..	..	2	..	..
Other Diseases	..	..	3	..	..
Diseases of the Eye.					
Blepharitis	..	..	90	1	..
Conjunctivitis	..	..	578	11	..
Entropion and Trichiasis	..	..	1	..	..
Keratitis	..	..	56	1	..
Ulceration of Cornea	..	..	12	2	..
Iritis	..	..	9	2	..
Trachoma	..	..	1	1	..
Optic Neuritis	..	..	3	1	..
Leucoma	..	..	3	..	..
Cataract	..	..	24	13	..
Other Diseases	..	..	67	13	..
Diseases of the Ear.					
Inflammation	..	..	194	4	2
Other Diseases	..	..	228	1	..
Diseases of the Nose.					
Coryza	..	..	318	5	..
Other Diseases	..	..	7	1	1
Diseases of the Circulatory System.					
Pericarditis	..	..	1	..	..
Endocarditis	..	..	3	1	..
Valvular Mitral	..	..	20	7	3
Other Diseases	..	..	27	8	1
Diseases of the Respiratory System.					
Laryngitis	..	..	11	1	..
Bronchitis	..	..	2,572	16	2
Broncho-Pneumonia	..	..	30	10	4
Emphysema	..	..	4	..	..
Pleurisy	..	..	33	13	..
Asthma	..	..	144	4	1
Other Diseases	..	..	26	2	..
Diseases of the Digestive System.					
Stomatitis	..	..	95	..	..
Caries of Teeth	..	..	1492	1	..
Glossitis	..	..	116	..	..
Pharyngitis	..	..	267	..	..
Tonsilitis	..	..	234	8	..
Gastritis	..	..	41	6	..
Ulceration of Stomach	..	..	1	..	..
Carried forward ..			13,852	780	65

TABLE VI. (a).—(Continued.)

(1) Return of Diseases and Deaths (In and Out-patients) for the year 1924.

(Non-Europeans Only).

Diseases,			Out-patients.	In-patients.	
			Total Cases Treated.	Admissions.	Deaths.
Brought forward	..		13,852	780	65
LOCAL DISEASES—(Continued).					
<i>Diseases of the Digestive System.</i>					
Dyspepsia	..	..	265	1	..
Appendicitis	..	..	2	1	..
Colitis	..	..	14	7	1
Hernia	..	..	197	111	5
Diarrhœa	..	..	223	34	2
Constipation	..	..	3,194	12	..
Colic	..	..	663	12	..
Hæmorrhoids	..	..	34	4	..
Hepatitis (Acute)	..	..	73	10	..
Hepatic Congestion	..	..	286	3	..
Abscess (Hepatic)	..	..	1	1	..
Cirrhosis (Hepatic)	..	..	4	2	..
Jaundice	..	..	8	1	..
Peritonitis	..	..	4	3	2
Ascites	..	..	12	6	1
Fistula in Ano	..	..	2	2	1
Other Diseases	..	..	147	18	1
<i>Diseases of the Lymphatic System.</i>					
Splenitis	..	..	171	2	..
Lymphangitis	..	..	106	15	..
Other Diseases	..	..	21	3	..
<i>Diseases of the Urinary System.</i>					
Nephritis (Acute)	..	..	9	5	1
" (Chronic)	..	..	7	6	..
Pyelitis	..	..	2	1	..
Calculus	..	..	38	17	2
Hæmaturia	..	..	33	3	..
Retention of Urine	..	..	9	9	1
Other Diseases	..	..	19	8	1
<i>Diseases of the Generative System.</i>					
Male Organs—					
Urethritis	..	..	101	2	..
Stricture	..	..	22	9	1
Soft Chancre	..	..	82	8	..
Hydrocele	..	..	249	155	3
Varicocele	..	..	3	1	..
Orchitis	..	..	255	23	..
Haematocoele	..	..	1	..	..
Epididymitis	..	..	12	3	..
Phimosis	..	..	40	7	..
Other Diseases	..	..	40	10	..
Female Organs—					
Amenorrhœa	..	..	4	..	..
Dysmenorrhœa	..	..	16	..	..
Menorrhagia	..	..	11	1	1
Abortion	..	..	2	2	..
Puerperal Septicæmia	..	..	4	4	1
Mastitis	..	..	4	..	..
Other Diseases	..	..	49	7	..
Carried forward	..		20,291	1,309	89

TABLE VI. (a).—(Continued.)

(1) Return of Diseases and Deaths (In and Out-patients) for the year 1924.

(Non-Europeans Only).

Diseases.	Out-patients.		In-patients.	
	Total Cases Treated.	Admissions.	Deaths.	
Brought forward ..	20,291	1,309	89	
LOCAL DISEASES—(Continued).				
<i>Diseases of the Organs of Locomotion.</i>				
Arthritis	105	7	..	
Synovitis	54	12	..	
Compound Ganglion	3	2	..	
Myalgia	1,593	15	..	
Other Diseases	46	4	1	
<i>Diseases of the Connective Tissue.</i>				
Cellulitis	166	28	1	
Abscess	330	85	1	
Elephantiasis	83	42	..	
Other Diseases	14	..	..
<i>Diseases of the Skin.</i>				
Urticaria	11	..	..
Eczema	199	2	..	
Boil	382	5	..	
Carbuncle	1	1	..	
Herpes	20	1	..	
Psoriasis	6	..	..
Scabies	812	5	..	
Impetigo	13	1	..	
Prickly Heat	145	1	..	
Ulcers	7,010	413	3	
Other Diseases	201	9	..	
Injuries-General	395	13	..	
do. Local	4,337	220	14	
Tumours Simple	39	13	..	
do. Malignant	11	10	1	
Poisons	4	4	..	
Snake Bite	3	..	..
Parasites-Animal				
Bilharzia	114	20	..	
Cestoda—				
Taenia Saginata	3	..	..
Taenia Solium	1	1	..	
Nematoda—				
Ascaris	30	6	1	
Filariasis	185	25	..	
Strongylus Intestinalis	10	4	..	
Ankylostomiasis	3,172	210	12	
Other Diseases	4	..	..
Insecta—				
Myiasis	13	..	..
Jiggers	61	1	..	
Total ..	39,866	2,468	123	
Parturition	15	15	..	

TABLE VI. (a).—(Continued.)

(2) Return of Diseases and Deaths (In and Out-patients) for the year 1924.

(Europeans only).

Diseases.	Out- patients.	In-patients.					
	Total Cases Treated.	Remaining in Hospital at end of 1923	Year 1924.		Total.	Remaining in Hospital at end of 1924	
			Admis- sions.	Deaths.			
INFECTIVE DISEASES.							
Chicken Pox	1	..	..	..	..	..
Dengue	5	..	1	..	1	..	
Dysentery	1	..	1	..	1	..	
Influenza	6	..	6	..	6	..	
Malaria—(a) Benign Tertian ..	16	..	2	..	2	..	
(c) Sub-Tertian ..	25	..	15	..	15	..	
(e) Blackwater Fever ..	..	..	..	..	..	..
Measles	2	..	..	..	..	..
Syphilis	2	..	..	..	..	..
Tuberculos	1	1	..	..	1	..
Undefined Fever ..	27	..	2	..	2	..	
INTOXICATION.							
Morphinism	1	..	1	..	1	..	
GENERAL DISEASES.							
Debility	15	..	..	..	..	..
Other Diseases ..	2	..	2	..	2	..	
LOCAL DISEASES.							
Sub-Section 1.							
Other Diseases ..	5	..	..	..	..	..
Sub-Section 2.							
Neuralgia	5	..	1	..	1	..	
Neurasthenia	1	..	1	..	1	..	
Sub-Section 3.							
Mental Diseases.							
Delusional Insanity ..	1	..	1	..	1	..	
<i>Diseases of the Eye</i>							
Conjunctivitis	1	..	..	..	..	..
Other Diseases	2	..	..	..	..	..
<i>Diseases of the Ear</i>	9	..	1	..	1	..	
<i>Diseases of the Nose</i>							
Coryza	9	..	..	..	..	..
<i>Diseases of the Circulatory System.</i>	2	..	..	..	..	..
<i>Diseases of the Respiratory System.</i>							
Bronchitis	16	..	1	..	1	..	
Asthma	2	..	1	..	1	..	
<i>Diseases of the Digestive System.</i>							
Diarrhoea	12	..	..	..	..	..
Constipation	10	..	..	..	..	..
Colic	4	..	..	..	..	..
Stomatitis	1	..	..	..	..	..
Carried forward ..	184	1	36	..	37	..	

TABLE VI. (a).—(Continued.)

(2) Return of Diseases and Deaths (In and Out-patients) for the year 1924.

(Europeans only).

Diseases.	Out-patients.	In-patients.				
		Remaining in Hospital at end of 1923	Year 1924.		Total.	Remaining in Hospital at end of 1924
	Total Cases Treated.		Admissions.	Deaths.		
Brought forward ..	184	1	36	..	37	..
Caries of Teeth ..	12	..	..	..	..	..
Pharyngitis ..	16	..	..	..	..	..
Tonsillitis ..	21	1	5	..	6	..
Gastritis ..	2	..	1	..	1	..
LOCAL DISEASES—(Contd.)						
Dyspepsia ..	13	..	1	..	1	..
Enteritis ..	1	..	1	..	1	..
Hepatic Congestion ..	13	..	..	..	..	..
Other Diseases ..	6	..	..	..	..	..
<i>Diseases of the Urinary System.</i>						
Nephritis ..	1	..	1	1	1	..
Calculus ..	1	..	1	..	1	..
Cystitis ..	1	1	..	..	1	..
<i>Diseases of the Generative System.</i>						
Male Organs—						
Urethritis ..	1	..	..	..	..	..
Other Diseases ..	1	..	..	..	..	..
Female Organs—						
Menorrhagia ..	1	..	..	..	..	..
Other Diseases ..	3	..	1	..	1	..
<i>Diseases of the Organs of Locomotion.</i>						
Arthritis ..	1	..	1	..	1	..
Synovitis ..	1	..	1	..	1	..
Myalgia ..	18	..	..	..	..	..
<i>Diseases of the Connective Tissue.</i>						
Abscess ..	1	..	1	..	1	..
<i>Diseases of the Skin.</i>						
Urticaria ..	3	..	..	..	..	..
Eczema ..	6	..	..	..	..	..
Boil ..	5	..	4	..	4	..
Tinea ..	3	..	..	..	..	..
Scabies ..	1	..	..	..	..	..
Prickly Heat ..	4	..	..	..	..	..
Ulcers ..	1	..	..	..	..	..
Other Diseases ..	5	..	..	..	..	..
Injuries—Local ..	16	..	3	..	3	..
„ —General ..	11	..	2	..	2	..
Nematoda—						
Ascaris ..	2	..	1	..	1	..
Insecta—						
Jiggers ..	1	..	..	..	..	..
Other Diseases ..	1	..	..	..	..	..
Total ..	357	3	60	1	63	..
Parturition ..	9	1	8	..	9	..

TABLE VI. (b).

GULONI INFECTIOUS DISEASES HOSPITAL.

The following table shows the admissions to the Hospital during the year 1924:—

	Remaining from 1923.	Admitted during 1924.	Total.	Died.	Discharged.	Remaining for 1925.	
Small Pox	3	9	12	1	11	...	
Suspected							
Small Pox	...	4	4	...	4	...	
Measles	...	11	11	...	11	...	
Chicken Pox	1	6	7	...	7	...	
Leprosy	...	21	21	1	19	...	19 sent to Funzi, 1 escaped.
Total	4	52	55	2	52	...	
Contacts:—							
Small Pox	4	31	35	...	35	...	
Chicken Pox	...	9	9	...	9	...	
Measles	...	29	29	...	29	...	
Total	4	69	73	...	73	...	
Grand Total	8	120	128	2	125	...	

Comparative Total showing cases during the past three years:—

	1922.				1923.				1924.				
	Admitted.	Discharged.	Died.	Remaining.	Admitted.	Discharged.	Died.	Remaining.	Admitted.	Discharged.	Died.	Remaining.	
Chicken Pox	5	5	..	..	17	16	..	1	6	7	..	..
Leprosy	..	..	..	..	5	5	..	..	21	19	1	..	
Measles	..	..	..	..	11	11	..	..	11	11	..	..
Small Pox	124	78	43	3	70	32	35	3	9	11	1	..	19 sent to Funzi. 1 escaped.
Suspected													
Small Pox	..	..	..	..	..	..	..	..	4	4	..	..
Contacts	241	240	..	1	53	49	..	4	69	73	..	..

The following are the particulars of Small Pox cases treated at Infectious Diseases Hospital at Gulioni:—

(a)	Total number of cases	9
	Died	... 1
	Discharged	... 8
		— 9
(b)	The Sexes of cases:	
	Males	... 5
	Females	... 4
		— 9
(c)	Distribution of cases:	
	Native quarter of the	
	Town	... 1
	Steamers and Dhows	... 4
	Among passengers from	
	Steamers on Quarantine	
	Station	... 1
	Mwera District	... 3
		— 9
(d)	Nationalities:	
	Swahili	... 4
	Ismaili	... 2
	Arab	... 1
	Indian Mohammedan	... 1
	Hindu	... 1
		— 9
(e)	Ages:	
	1 to 5 years	... 2
	6 „ 10 „	... 4
	11 „ 20 „	... 1
	21 „ 30 „	... 1
	31 „ 40 „	... 1
		— 9

APPENDICES.

- I. Annual Medical and Sanitary Report for Chake Chake 1924.
- II. Annual Medical and Sanitary Report for Weti 1924.
- III. The Report of the Economic Biologist for 1924.
- IV. The Annual Report of the Zanzibar Maternity Association for 1924.
- V. A Report on the treatment of Leprosy by Dr. D. S. Scott.
- VI. An Operation for the Radical Cure of Hydrocele by Dr. D. S. Scott.

APPENDIX I.**ANNUAL MEDICAL AND SANITARY REPORT
FOR CHAKE CHAKE AND MKOANI, 1924.****SECTION I.—ADMINISTRATION.****CHAKE CHAKE.***Medical Division.*

Staff.—The staff consists of one Medical Officer, one Nursing Sister, one Asiatic Dispenser, one Asiatic Clerk and six Native Dispensary and Hospital Attendants.

No Medical Officer was available until Dr. P. L. L. Craig returned from leave on 2nd April, from which date he remained in charge until the end of the year.

The staff requires to be increased by the provision of a Sub-Assistant Surgeon to enable the Medical Officer to undertake more district work and to pay more frequent visits to Mkoani, which is also under his medical charge.

Sanitation Division.

Staff.—The Medical Officer also performed the duties of Medical Officer of Health from the date of his arrival in April. The staff also consists of one Asiatic Sanitary Inspector, three Native Mosquito Inspectors and one Poor and Leper Attendant.

Mkoani.

Staff.—The staff consists of one Asiatic Sub-Assistant Surgeon, one Native Dispensary Apprentice in charge of Kengeja District Dispensary, and three Native Dispensary or Hospital Attendants

SECTION II.—PUBLIC HEALTH.

During the year there was nothing unusual in respect of the Public Health. Out of 7,479 new cases treated, Ulcers (2,188) and Ankylostomiasis (1,630) totalled almost half. There were 12,016 repetition cases.

1. GENERAL DISEASES.

During the year 92 cases were diagnosed as Chronic Rheumatism and 67 as Debility—both rather elastic terms of indefinite signification. There were 21 cases of Anæmia (regarded as not due to Ankylostomiasis or Malaria), one case of Hodgkin's Disease, and one of Purpura.

2. COMMUNICABLE DISEASES.

(a) *Mosquito or Insect-Borne.*

Malaria.—In the past year 558 cases were treated compared to 699 in 1923. These numbers count for little, but as Anopheline Mosquitoes are now less commonly seen, a decrease in cases of Malaria should naturally be expected. The Subtertian type overwhelmingly predominates. Intramuscular injections have been largely used in cerebral attacks and when vomiting was troublesome; like all intramuscular injections they cause local induration, but in my experience this is only a temporary inconvenience.

There were two cases of Blackwater Fever, both in Indians; one treated in Hospital recovered; the other treated at home died with suppression of urine.

Filariasis.—Filarial Lymphangitis and Orchitis are fairly common, and there are numerous cases of Elephantiasis of the limbs and scrotum.

(b) *Infectious or Epidemic Diseases.*

Influenza.—A form of Influenza was somewhat prevalent, during March and April particularly. The cases were mild for the most part, but several were complicated by fatal Pneumonia.

Dysentery.—Quite a number of cases of Diarrhœa, with motions consisting almost entirely of mucus and blood, occurred sporadically throughout Chake Chake and Mkoani districts during November and December. Microscopically the stools consisted of a uniform mass of leucocytes and red blood corpuscles without anything suggestive of amœbæ. The patients for the most part did not appear very ill, had very little fever, and did not complain much of tenesmus. They recovered in a few days on simple saline treatment. One case brought into hospital in a collapsed condition died seven hours after admission; in this case, besides leucocytes and red corpuscles there were in the stools other much larger granular cells (not amœbæ). No malarial parasites were found in any of the bloods examined.

Yaws.—Since the adoption of intramuscular injections of Potassium Sodium-Bismuth Tartrate, the number of patients coming for treatment has increased rapidly—from four in September to 22 in December. Their faith in the treatment is justified by the gratifying results.

Gonorrhœa.—Patients as a rule do not seem to distinguish between Gonorrhœa and Urinary Bilharziasis, at least not until direct questions are put. More cases presenting themselves for treatment turn out to be due to the Schistosoma than to the Gonococcus. Judging from the examination of prisoners, evident Gonorrhœa appears to be less prevalent than one would expect.

There have been a fair number of cases of Gonorrhœal arthritis.

Syphilis.—Few cases of primary Syphilis come for treatment, and even secondary and tertiary cases are not very frequently seen. Only a small proportion of Ulcers are regarded as syphilitic.

Tuberculosis.—Tuberculosis of the lung is especially common among Indian women, who are confined so much to ill-ventilated houses. Among natives men appear more frequently affected than women.

Leprosy.—Those who suffer from this disease do not voluntarily present themselves for treatment. A few cases are diagnosed among patients coming with other complaints and others are sent in by the Headmen of villages.

Puerperal Fever is the cause of many more deaths than the statistics show.

Acute Rheumatism does not seem to occur in Pemba.

There have been no cases of Small Pox, Enteric Fever, Cerebro-Spinal Fever, Measles, Whooping Cough or Chicken-pox.

(c) *Helminthic Diseases.*

Ankylostomiasis.—This is the disease of Pemba par excellence, 1,630 cases were treated during the year. For the greater part of the year Oil of Chenopodium was the drug used, and it proved very satisfactory. Since September Carbon Tetrachloride has been given to all cases suffering from Ankylostomiasis alone, Oil Chenopodium being reserved for cases of double infection with Ankylostoma and Ascaris. As many cases have to be treated on clinical signs and symptoms without examination of the stool, Oil of Chenopodium has the advantage over Carbon Tetrachloride in that it is effective in both these infections. It is too early to give an opinion on the comparative effectiveness of the two drugs. No ill-effects have been observed from the use of either of them.

Bilharziasis.—Sixty-one cases were treated during 1924, all being urinary affections. No case of rectal Bilharzia was recognised owing to pressure of other work. Only a few of the cases were treated by intravenous injections of Tartar Emetic, and of these fewer still completed the course. Most were treated by rectal injections, under which signs symptoms rapidly clear up and ova may be difficult to find in the urine by ordinary examination, but may be found fairly numerous on examining a centrifuged specimen. Patients do not seem to find Urinary Bilharzia a serious trouble.

Ascariasis appears to have been more common lately; there were seven cases among in-patients, mostly in association with Ankylostomiasis. It clears up much more rapidly than the latter under Oil of Chenopodium.

3. LOCAL DISEASES.

Diseases of the Nervous System are uncommon apart from the effects of Malaria. As the result of Malaria there have been cases of Monoplegia, Hemiplegia, Mania, and Coma.

Acute Endocarditis is rare. Chronic Valvular Disease, especially Aortic, is fairly common. There was only one case of Pericarditis, complicating Nephritis.

Acute Bronchitis is uncommon, and true Coryza is also somewhat rare. Most of the cases classified as Bronchial Catarrh complained only of cough with very slight lung signs and nothing else found to account for it.

Asthma does not seem to have been quite so prevalent lately, but residence in Pemba appears to have a tendency to bring on attacks in those predisposed.

Constipation is the commonest trouble of the Digestive System. Appendicitis is extremely rare among the natives.

Hernia and Hydrocele are very prevalent. Ulcers and Scabies are common affections of the skin.

B. OFFICIALS.

There has been very little illness among the few Europeans of the Station, and nothing worthy of note. Only one had an attack of Malaria Fever.

A considerable proportion of the Asiatic Officials have at one time or another suffered from Malarial Fever. Ten have been treated in Hospital. Prophylactic Quinine is taken more or less regularly by all Officials.

C. GENERAL NATIVE POPULATION.

The population of Chake Chake and Mkoani Districts according to the last census is 52,820.

There were registered 905 Births and 818 Deaths, but statistics cannot be relied upon.

School Children.—There is a good deal of chronic illness among them, chiefly due to Malaria and Ankylostomiasis, but it seems to interfere with their attendance at school less than one would expect. One hundred and five sick forms were issued by the teacher to scholars during the year.

SECTION III.—SANITATION.

I. PREVENTIVE MEASURES.

(a) *Mosquito or Insect-Borne Diseases.*

Anopheline mosquitoes are not numerous in the houses of Europeans, in the Hospital or Prison, and it is only at times that other mosquitoes may be regarded as troublesome at the hours of

dusk. The number of mosquitoes in other houses of the township has also decreased. The new drainage system completed at the end of 1923 is certainly entitled to some of the credit for this. The various collections of water arising from springs in which Anophelines may breed are regularly inspected and dealt with; the houses are regularly inspected for water containing larvæ, and sullage pits and tanks are oiled weekly.

Prophylactic Quinine.—A weekly dose of Quinine was given to Asiatic Officials, School Children, Police and Prisoners, totalling 2,883 doses.

Most of the Europeans take Quinine regularly.

(b) *Epidemic Diseases.*

No case of Small Pox came under notice in Chake Chake and Mkoani Districts during the year; to this is probably due the fact that there was a considerable fall in the number of vaccinations carried out. There were no outbreaks of Measles, Whooping Cough or Chicken Pox, and no case of Enteric Fever. There were several cases of "Influenza", especially in March and April, for the most part of a mild nature. In December there were sporadic cases of non-amœbic and atypical "Dysentery", mild and of short duration, throughout the Chake Chake and Mkoani Districts.

Ankylostomiasis continued to be the cause of an immense amount of ill-health and many deaths.

Urinary Bilharzia comes more into evidence each year, but it is not taken very seriously by the natives.

II. GENERAL SANITARY MEASURES.

Disposal of Refuse.—Mkoani finds the Horsfall Incinerator of considerable service; Chake Chake has still to depend on improvised incinerators. Most of the refuse has to be dumped without burning, and it is surprising how free from nuisance the dumps remain.

Sixteen new sullage pits have been put under construction during the year, of which three or four are not yet quite completed. According to present regulations no pit is allowed to be covered in until the Public Works Department has certified that porous soil has been reached. The average depth of the new pits is about 20 feet, and it is confidently expected that they will prove much more efficient than the older pits, some of which are only 10 feet deep.

Subsoil Drainage.—No work of this nature has been undertaken.

Surface Drainage.—The scheme which was brought more or less to completion at the end of 1923 is working very satisfactorily and may at least partly account for the apparent decrease in anopheline

mosquitoes. It carries off the surface drainage of the roads, the overflow of stand pipes, the market drainage and the water from several of the Mosques.

Clearance of Bush, etc.—As this work has to be repeated every two or three months, it follows that, with the present staff often much below strength, the whole town area is never adequately cleared at any one time.

Water Supply.—No work was carried out in the respect of this during the year. According to the Bacteriologist's Report the supply is highly contaminated, although no ill-effects have been traced to it. Schemes for its improvement are under consideration.

Leper Settlements.—The Pujini and Kengeja settlements remain as before, the number of lepers showing little change. New cases are sent to Funzi when accommodation is available.

Milk Supply.—Dairy licences are issued and samples of the milk are occasionally examined. On the whole results of examinations have been satisfactory. Milk is best brought from a distance in small vessels such as bottles or kettles.

Slaughter-House.—The new slaughter-house at the Quarantine Station was brought into use at the end of the year and is proving a success.

Market.—The thatched roof was repaired during the year, and a concrete garbage bin has replaced the old objectionable wooden bins. The market is kept satisfactorily clean, the meat and fish stalls being thoroughly washed down every evening and periodically whitewashed.

Opium Control.—The only persons to whom opium has been issued have been sojourners bringing licences from Zanzibar.

SECTION IV.

HOSPITAL AND DISPENSARIES.

At Chake Chake Hospital there were 7,479 new cases and 12,016 repetitions. The number of in-patients was 534. The commonest diseases have been Ulcers, Ankylostomiasis, Malaria and Injuries. Yaws and Urinary Bilharzia are assuming a more prominent position in the list.

From the beginning of April, 76 operations were performed in the operation-room, 51 under Chloroform and 25 under local anæsthetic. Cases for operation are only beginning to come in more freely, and during the year there was a notable falling off in the number of operations for Elephantiasis Scroti and for Cataract. Many minor operations are done in the examination room with or without local anæsthesia.

No new work has been carried out in connection with the Hospital buildings.

One Dresser has been stationed at Kengeja, and steps are being taken to establish two District Dispensaries.

SECTION V.

POLICE AND PRISONERS.

Police.—Thirteen were treated as in-patients including one with Tuberculosis of the lung, one with Aortic Regurgitation, and two with Paresis.

Prisoners.—Most of them are affected more or less with Ankylos-tomiasis, for which a number have been treated. Apart from this there has been no serious illness among them. There has been no epidemic disease and no death. Only six were treated as in-patients.

The sanitary condition of the Prison has been good, mosquitoes are prevented from becoming a nuisance in the cells by regular daily swatting.

MKOANI.

The Administrative Staff at Mkoani Hospital during the year consisted of one Sub-Assistant Surgeon, three Hospital Boys and one Cook (female).

New patients to the number of 4,403 were treated during the year with 3,848 repetition cases. Patients were treated in hospital totalling 148.

The common diseases were Ulcers, Malaria, Anæmia, Bronchitis and Constipation.

There was an absence of Epidemic Diseases, but towards the end of the year there were a number of cases of a mild kind of "Dysentery".

Mkoani cannot be regarded as a healthy station. Both European and Asiatic Officials suffer a good deal from Malaria. The rice swamp to the north of the township is a prolific breeding ground of mosquitoes.

The present staff of the Public Health Department, consisting of the Sub-Assistant Surgeon acting also as Sanitary Inspector, two Sweepers, one Gangman and a Headman, is not sufficient for regular sweeping duties, clearing of town area, attending to the incinerator, and doing something towards abating mosquito breeding places in the adjacent swampy areas.

The rebuilding of the Assistant District Commissioner's house was completed during the year. The market is still a ruin. Little has been done to improve surface drainage. Considerable alterations are required in the Hospital and in the Sub-Assistant Surgeon's house.

APPENDIX II.**ANNUAL MEDICAL AND SANITARY REPORT
FOR WETI, 1924.****SECTION I.—ADMINISTRATION.***Medical Division.*

Staff.—The staff consists of one Medical Officer, one Nursing Sister, one Asiatic Dispenser, one Asiatic Clerk and eight Native Dispensary or Hospital Attendants.

Dr. R. Howard was in charge until 16th January, Dr. W. A. Young from 16th January to 2nd July, Dr. T. A. Austin from 2nd July to 30th August and Dr. D. S. Scott from 30th August until the end of year.

No Nursing Sister was available from the 16th January until the 12th of March.

Sanitation Division.

Staff.—The Medical Officer also acted as Medical Officer of Health throughout the year and was assisted by an Asiatic Sanitary Inspector.

SECTION II.—PUBLIC HEALTH.**A. GENERAL REMARKS.****I. *General Diseases.***

General Health is fair—the chief diseases being Rheumatism Chronic 75 cases, Bronchitis 235, Ear Trouble 45, Eye Trouble 79, Dental Carries 126, Constipation 285, Diarrhœa 27, Hernia 50, Hydrocele 106, Elephantiasis 31, Ulcers 700, Local Injuries 372 and Yaws 301. Chronic Rheumatism seems to be common and is most probably due to old venereal trouble. Many suffer from Bronchitis, there being more cases in September and October, probably due to the rise in humidity and temperature causing the native to expose himself unduly to chill winds when he is perspiring freely.

Ear Trouble is mostly wax in the ear, but a few have middle ear trouble.

Eye Trouble of various kinds is frequent, which again is generally specific, but many complain of defective vision with no pain. There

is a mild form of conjunctivitis, but simple treatment seems to clear up the condition. It would appear that the glare and dust are chiefly responsible.

A. C. Irvine in the *Kenya Medical Journal* for June, 1924, mentions that 70 per cent. of the natives attending his out-patient department have pyorrhœa. We have also a very large number—235 cases came here with bad dental carries and pyorrhœa. The difference here is that most of the natives eat meat and fish.

Bowel complaints are frequent, though many come to get a purgative only and others when examined admit they have had no motion for several days.

There is a type of Diarrhœa amongst the natives of which we have had three cases since my arrival in which no organisms or ova are seen microscopically but only pus cells, red blood corpuscles, large epithelial cells and much undigested food and other intestinal debris. The stools in all the cases contained blood and all were very foul smelling. One case went steadily downhill in spite of treatment. At times he rallied slightly, but improvement was only temporary and the condition eventually proved fatal. The other two are still in Hospital and one appears to be improving. The case which died had all the appearances of a tubercular enteritis and had suspicious sounds in the apices of both lungs.

The usual large number of Tropical Ulcers occurred. The worst ones were admitted to Hospital when willing to come in. Some were treated with Sodium Bismuth Potassium Tartrate (six grains) injections and after three of these there seemed to be some improvement. The disadvantage is that a certain amount of reaction—pain and swelling—follows and the natives are not willing to have them. I am now trying Liniment Iodi painted on the ulcers daily with a weak lysol-dressing. So far the results have been encouraging.

Yaws.—Three hundred and one cases attended. Some received Sodium Bismuth Potassium Tartrate Injections and often one was all that was needed to clear up the sores. Mist. Potass. Iodide and Liq. Hydr. Perchloride was given by mouth and Ungt. Hydrarg. put on the sores.

Venereal Disease.—Sixty-five cases of Gonorrhœa but only 17 actual recognisable cases of Syphilis were seen. Many other diseases and sundry aches and pains are probably due to old specific disease.

Local injuries are chiefly bruises abrasions and minor cuts.

II. Communicable Diseases.

The chief diseases are Malaria—acute 198 and chronic 58—Bilharzia 19, Ankylostomiasis 287.

The acute attacks of Malaria do not last long, but the chronic ones have all very large spleens and their general condition is poor. They get frequent mild attacks of fever.

In the cases of Bilharzia, I tried Castellani's Tartar Emetic Mixture, but it is impossible to say whether it has benefited them or not as when they see no more blood in the urine they cease attendance. The few who have brought further samples of urine showed a good many red blood cells but no ova could be found. Injections here again are not popular and should the urine clear after one or two doses the native is seen no more.

There are very many cases of Ankylostomiasis and the natives come readily for treatment, as the administration is oral and they realise the benefit they receive. *Ol Chenopodii* is used and no untoward results have been seen.

As usual there were many cases of chronic Malaria among the Indian population, most of whom have very large spleens. On one occasion I examined 14 school children, chiefly Indian, and found 12 had palpable spleens.

There is no actual seasonable incidence and recurrence of any particular disease.

B. EUROPEAN OFFICIALS.

One European Official was 24 days off duty with Malaria up to June 22nd. No further attacks occurred during the year. Otherwise the general health was good.

C. ASIATIC OFFICIALS.

No diseases of any importance. General health was good.

D. GENERAL EUROPEAN POPULATION.

Fourteen Europeans. No diseases of any importance. General health was good.

E. GENERAL NATIVE POPULATION.

Population (1924 Census)	...	34,829
--------------------------	-----	--------

Total births registered during the year	...	376
---	-----	-----

Total deaths registered during the year	...	461
---	-----	-----

SECTION III.—SANITATION.

I. PREVENTIVE MEASURES.

Mosquito.—New drains cut to act as catch-water drains and other drains made in swamps. Water-works river was cleaned and opened out.

II. GENERAL MEASURES.

All refuse is burned in the incinerator which is just able to deal with each day's rubbish when quite dry and a special covered platform has been asked for in order to deposit the rubbish for drying. By an entire reconstruction of the incinerator the rubbish can be dried by the heat from the fire box, which at present goes to waste up the chimney. This can be done by passing the heat horizontally from the fire through between two drying chambers to be used alternately for drying the rubbish. Thus each day's rubbish would be dried for 24 hours before being burnt.

Bush was cut down, where needed, around houses.

Rainfall from 1st January to 31st December, 1924—53.59 inches.

SECTION IV.

Hospital.—The In-Patients last year numbered 490 with 22 deaths as compared with 516 cases with 8 deaths in 1923 and 792 cases with 4 deaths in 1922. Reference has already been made (Section II, p. 3) to the decrease in the number of Out-Patients at this station and the reduction was attributed to the many changes in the Medical Officers during the year and the time that must elapse before a new doctor obtains the confidence of the natives. The same explanation holds good for a decrease in the minor type of hospital cases requiring admission for only a few days, but does not apply to the urgent or serious cases. For these, confidence in hospital treatment is becoming yearly more firmly established throughout the district. Although, therefore, there was a decrease in the number of patients last year as compared with the two previous years, the cases were, as indicated by the increased number of deaths, of a much more serious nature requiring detention in hospital for long periods and rarely was any bed unoccupied. On the other hand, there often persisted for some weeks a waiting list of four—a considerable number for such a small hospital—and further accommodation is urgently required.

Operations.—The following operations were performed during the year:—

Cataract Extraction	...	2	Hæmorrhoids	...	1
Excision of Eye	...	3	Abscess	...	4
Removal of Foreign Body—Nose...	...	1	Tear in Scrotum	...	1
Radical Cure of Hydrocele	...	64	Removal of Painful Precosteal		
Circumcision	...	13	Node in Tibia	...	1
Elephantiasis	...	7	Fractures	...	2
Sebaceous Cyst	...	1	Local Injuries	...	2
Myositis	...	2	Parentesis Thoracis	...	1
Sequestrotomy	...	2	Lipoma Neck	...	1
Radical Cure of Right Inguinal			Septic Scrotum	...	1
Hernia	...	23	Dermoid Cyst of Scalp	...	1
Radical Cure of Left Inguinal			Ganglion	...	1
Hernia	...	8	Cellulitis	...	3
Hæmatocele	...	2	Filarial Oedema of Scrotum	...	1
Amputation	...	2	Osteomyelitis	...	1
Myomectomy	...	2	Orchitis	...	1
Castration	...	2	Pelvic Tumour	...	1
Scraping Ulcers	...	7	Suture of Wounds	...	2
Removal of Nasal Polypi	...	1	Caries—Teeth	...	3
T. B. Leg	...	1	Fibroma of Mouth	...	1
Mastoiditis	...	2			
					175

SECTION V.—WETI PRISON.

Annual Return of Prisoners.

Total number of prisoners remaining on 1st January, 1924	...	12
Number admitted during the year	...	310
Average daily number in gaol	...	18.37
Total number treated (including out- and in-patients)	...	130
Total number of days under treatment	...	317
Average number under treatment	...	0.86
Total number admitted to hospital	...	12
Total number of days in hospital	...	199
Average number in hospital	...	0.54
Total number of deaths		Nil
Percentage of deaths to average daily strength		Nil

The general health of the prisoners was good, the diseases treated being those prevailing among the native population.

The prison was inspected regularly and was always clean and well kept.

APPENDIX III.

ANNUAL REPORT OF THE ECONOMIC
BIOLOGIST FOR 1924.

Staff.—Comprises the Economic Biologist and five Native Attendants.

The Senior Medical Officer of Health and the Veterinary Officer sent in a large number of blood films, etc., for routine examination.

Malaria.—A complete Malaria Survey of the Protectorate is still in preparation. As mentioned in my Report for 1923, the results of these investigations will be published elsewhere.

The following resume comprises the chief data obtained:—

Total number African children examined	723
Parasite rate	487 = 67.3%
Gametocyte rate	114 = 15.7%

Species of Parasite found were—

Benign Tertian	261 = 36.9%
Subtertian	138 = 19.8%
Quartan	68 = 9.4%
Benign Tertian Gametocytes	64 = 8.9%
Subtertian Gametocytes	20 = 2.7%
Quartan Gametocytes	30 = 4.14%

In all cases thick and thin films were examined. Parasites in small numbers were often found in thick films only, these are returned in the total parasite rate (487), but classified in all doubtful cases as undefined. The average age of the children examined was approximately five years.

Total number of African adults examined 312

Parasite rate 58 = 12.17%

The majority of these showed very few parasites in thick films. Most of them are returned as undefined. Crescents were detected on two occasions, Benign Tertian and Quartan Gametocytes were not observed.

The blood films examined were drawn from the following localities:—Mwera, Mwera Arab School, Dunga, Chwaka, Mkokotoni, Donge, Ziwani Lines, Bweleo, Kombeni, Ungujaku, Kizimkazi, Tungu, Bububu, Mfenesini, Fumba, Demani and Saateni. These districts represent topographically different conditions, some are well watered by perennial streams with a heavy rainfall, others in dry areas with

a correspondingly low rainfall. There is no marked difference between the dry and wet zones, all communities of children examined showed a marked parasitæmia.

Young children from one to two years old always showed a high parasite rate with numerous gametocytes. From six to ten years old the infectivity was much lessened with a great decrease in the number of gametocytes.

From these findings it will be seen that Malaria is practically universal among the native population. All three species of the plasmodium are prevalent, Benign Tertian being the commonest form.

The Anophelines in Relation to Malaria.—Engorged females were captured in various localities and dissected to ascertain the sporozoit and oocyst rates. Adults from the following places have been examined:—Mwera Police Lines and Jail; Bububu Police Lines and Indian Houses; The Central Prison; Ziwani Lines; Mahonda Police Lines; Mkokotoni Police Lines; Zanzibar Town.

The results of these dissections are tabulated as follows:—

Total number of Anophelines dissected	1,523
Total number of Anophelines infected (Sporozoits and oocysts)	128 = 8.4%
Total number of <i>A. costalis</i> dissected	1,014
Total number of <i>A. costalis</i> infected	72 = 7.1%
Total number of <i>A. funestus</i> dissected	509
Total number of <i>A. funestus</i> infected	56 = 11.1%

Five Anophelines are known to occur in the Protectorate, namely, *A. costalis*, *funestus*, *mauritanus*, *squamosus* and *longipalpis*. Both *A. costalis* and *funestus* show a high rate of "Natural Infectability". The other three species were not captured in houses. The figures are small, but this work will be continued until at least 3,000 have been dissected for the natural infectability rate. Experiments will be undertaken as soon as possible to test the "Experimental Infectability" rate of *A. costalis* and *funestus* to all three species of the plasmodium.

A survey is in the course of preparation to tabulate the various types of breeding places preferred by our two potential Malaria Carriers.

Filariasis:—Blood films taken at night have been examined for the incidence of *Microfilaria bancrofti*. The following figures have been obtained:—

African total number examined	517
Infected	134 = 25.9%

The natives were from different districts of the Protectorate. At the same time engorged adult *Culex fatigans* were captured in various houses scattered throughout the town and dissected on the twelfth day to ascertain the natural infectability rate for *Microfilaria* with the following results:—

Number examined	452
Number infected (proboscis)	113 = 25%

While dissecting *Anopheles costalis* and *funestus* in relation to the "Malaria Survey" many of both species were noticed to be infected with *Microfilaria bancrofti*. Further work will be undertaken to ascertain the infectability rate of these two species in comparison with *Culex fatigans*.

Anti-Mosquito Measures.—In March, 1924, the Biological Division took over all work in connection with the supervision of mosquitoes. The city was divided into five districts to facilitate house-to-house inspection. Each district is in charge of an inspector, who is accompanied by one boy to help him in his work. The total number of houses inspected weekly in the town was 2,229. On an average 74 houses were visited by one inspector daily. Table Nos. 1 and 2 appended at the end of this Report show the results of the working of the brigade.

TABLE No. 3.

Comparative table showing collections of mosquito larvæ found in the township:—

	1922	1923	1924
<i>Anopheles</i>	29	4	5
<i>Culex</i>	113	67	87
<i>Stegomyia</i>	509	187	384

TABLE No. 4.

Comparative table showing collections of mosquito larvæ found in Ngambo districts (African Town).

	1922	1923	1924
<i>Anopheles</i>	43	75	41
<i>Culex</i>	126	1,271	157
<i>Stegomyia</i>	1,485	2,035	753

TABLE No. 5.

The breeding places of Anophelinæ in the township were as follows :—

- 1. In a hole on main road at Malindi Mizingani near Harbour Works, March 27th.
- 2. On ground at Mnazi Moja near Peace Memorial, April 7th.
- 3. In garden of House No. 12, Shangani, April 14th.
- 4. On ground at Mnazi Moja near Peace Memorial, April 28th.
- 5. On ground at Mnazi Moja near Peace Memorial, June 2nd.

TABLE No. 6.

The following mosquito adults were caught in the township :—

Anopheles.	Culex.	Stegomyia
71	2,483	266

Out of the 71 Anopheline adults 11 were actually caught in the town. Sixty were found in the Infectious Diseases Hospital at Gulioni. Adjoining the Hospital is a valley which, during and after the rains, was a large swamp. Permanent anti-malarial drainage, consisting of a main concrete channel with numerous subsidiary tile drains, was finished towards the end of the year. On completion of the work the incidence of adult Anophelinæ sank almost to a vanishing point.

The breeding places of Anophelinæ in the Ngambo districts were of a very varied character. Small adventitious pools, swamps, etc., formed during the rains were most prolific nurseries. On five occasions larvæ were found in large cemented tanks. Such reservoirs attached to mosques for ablution purposes are favourite haunts of Anpoheline larvæ, especially when a thin line of algid growth appears on the side of the tank. These tanks are emptied and dried weekly; as soon as a piped water supply is introduced these nuisances should cease. On one occasion Anopheline larvæ were found in an iron drum, a most unusual situation.

Number of notices served	360
Number of prosecutions instituted	8
Number of convictions	7

It should be noted that in all tables “Anopheles” refers to Anopheles costalis, “Culex” to Culex fatigans and “Stegomyia” to Aedes argenteus. Several other species of Culicines were captured in the town, notably Culex tigripes and Toxorhynchites brevipalpis. These last two species might be looked upon as allies considering their cannabalistic habits towards their brother larvæ. In one district,

namely *Gulioni*, numbers of *Ochlerotatus pembænsis* were caught, adults are voracious blood suckers during the day; their larvæ were found in great numbers in crab holes in a tidal inlet. No satisfactory measures have been found to stop the digging propensities of these large Crustacea. Various poisons were tried, but all were ineffective.

The result of the year's work is encouraging as shown by the small findings (5 and 11) of Anopheline adults and larvæ. *Culex fatigans* is the most dominant mosquito in the town, although larval findings point to *Stegomyia faciata*. The adult index shows a marked preponderance of *C. fatigans* (*see* Table No. 6). Considering that *Culex fatigans* breed chiefly in sullage pits, cesspits and drains, the possibility of eradicating this species of mosquito is well nigh impossible until an up-to-date sewerage system is laid in the town.

TABLE No. 7.

Sullage and cesspits oiled weekly in 1924:—

January	400	August	483
February	403	September	500
March	407	October	507
April	410	November	522
May	434	December	536
June	459		—
July	461	Total	5,522
			—

These pits are covered with large, circular reinforced concrete covers easily lifted, giving the oiler free access. There are still in various quarters of the Town, more especially in the African zone, many sullage and cesspits with no covers. These are practically inaccessible and impossible to oil efficaciously. Attempts are being made to devise a cesspit for the natives which will be mosquito proof.

Much clearing of bush in private gardens, public squares, etc., has been carried out conjointly by the Public Health and Agricultural Departments.

The effect of masses of vegetation in a tropical town is:—

1. To enhance the difficulty of finding breeding-places of mosquitoes.
2. To cut off the sea breezes from a great number of residences.
3. To increase the atmospheric humidity.
4. To provide ideal harbourage for adult mosquitoes.
5. To cut off sun and prevent rapid evaporation of adventitious breeding pools.

I strongly urge that this work should be continued and that all gardens, as far as possible, should be cleared of dense bush and thick shrubbery. Such conditions can be replaced by ornamental flower beds, grass lawns and suitable shade trees with a good top canopy.

Personal of the Mosquito Brigade.—The posts of Mosquito Inspectors, which are now being filled by Africans trained in the Government School, have answered well. The majority have shown intelligence and aptitude for the work. The remuneration offered is attractive. Young Africans who have received a good general education are entered in the Apprentice Class on a salary of Rs. 20 to Rs. 48. After two years in the Apprentice Class an examination will be held and successful candidates will be promoted to the 5th grade on a salary of Rs. 50 by Rs. 5 to Rs. 70.

The Mosquito Inspector is beset with difficulties in a large oriental city like Zanzibar. They are frequently restricted in their investigations on the plea that the day is unsuitable, the master of the house is absent, that there is illness or mourning in the house, that the women are unveiled, that food is being cooked, etc.

In other cases the inspectors are diffident about entering and searching European houses or those of influential Arabs or Indians. The Economic Biologist has personally accompanied all inspectors on their rounds, has made surprise visits and explained to householders their duties and reason for the inspectors' visits.

The African Quarter, Ngambo.—The small brigade started in 1923 has done good work. Many unknown adventitious Anopheline breeding grounds discovered have been filled or oiled. There are a few large swamps in the Ngambo district which require permanent work. These will be taken in hand by the Public Works Department in 1925.

House-to-house inspection has been carried on among the maze of native huts; I have impressed on the inspectors the necessity for propaganda and for explaining the life history of the mosquito. During my visit to this quarter, I was agreeably surprised to find that many householders understood the reason for the inspector's weekly visit and could at a glance recognise larvæ as a stage in the mosquitoes life cycle.

Table No. 4 shows the results of the year's work.

Propaganda, Lectures, Demonstrations, etc.—Lectures and demonstrations of field work have been given to various groups of people. Sergeants of the Police Force were given six lectures and a practical demonstration in the field. The School Teachers were given a series of lectures on Malaria and Anti-Malaria Measures from a biological standpoint. All were taken to Malarial Centres and shown adult Anophelines in houses, their method of capture and recognition, the finding and diagnosing of various larvæ. Practical preventive

measures were shown such as oiling, bush clearing, digging of temporary drains, filling, looking for spoil-banks and rough canalising of streams.

Groups of natives were assembled in the Health Office and living mosquitoes, both adults and larvæ, were demonstrated, this was followed up by a short lantern lecture showing them work which had been carried out in other countries.

The Biological Division has a large collection of lantern slides relating to Malaria and its prevention.

The Rockefeller Cinema Films "Malaria" and "Unhooking the Hookworm" have been ordered; arrangements have been made to exhibit them in the local Cinema Palace.

A travelling portable magic lantern is on order to enable demonstrations to be given in the outlying districts.

I am confident that such measures as outlined will in the end be of great value; patience and reiteration are required. It is also hoped that short popular articles on Mosquitoes and Malaria will be published from time to time in the local Press. The Zanzibar Government pamphlet on Malaria, and *Afya*, published by the Tanganyika Territory Government, are widely read.

Anti-Malaria Work.—The most important achievement in this direction during the year was the permanent drainage work carried out in the Kiungani Swamp. Technical details regulating to the type of drains laid are published in the Annual Report of the Public Works Department. The swamp area in question was drained by three-inch diameter agricultural tile drains cradled in rubble discharging into a central sump, the water being carried away from the sump into a concrete conduit, which discharged into the main arterial system of surface drains. Agricultural tile drains leading into open concrete channels have proved most useful in controlling outcrops of seepage water on hillsides. All the old existing open concrete channels were provided with weepholes to help in disposing of seepage and subsoil water.

Automatic oiling tanks made of concrete were installed over open drains with a slight fall; they have proved satisfactory and economical in the use of oil.

The permanent anti-malarial work carried out this year has markedly lessened the findings of Anopheline adults and larvæ in the vicinity of the Ziواني Police Lines. This a measure of great importance as Anophelines from this area, owing to the large number of African children living in the camp, always showed a high infective rate with sporozoites.

Visits were paid to the following outstations: Mwera, Chwaka, Mkokotoni. Advice was given and oil issued to those responsible. I submit the following suggestions for future work in relation to anti-mosquito measures generally.

Culex fatigans.—Ubiquitous, but showing a marked preference for dirty water as cesspools, cesspits, broken and obstructed drains, ponds of rainwater on badly damaged roads.

1. A complete sewerage system to be installed as soon as possible. Until this is accomplished the control of *Culex fatigans* presents great difficulties.
 2. Protection of sullage pits by traps forming a water seal.
 3. Fitting existing native cesspits with an efficient mosquito proof cover.
 4. Better laying and grading of existing drains.
- Measures 2, 3, and 4 would be obviated by the adoption of measure No. 1.

Stegomyia fasciata (*Aedes argenteus*).—These should be controlled by the mosquito brigade.

1. Inspectors instruct all householders to empty and dry all vessels on the day of their visits.
2. Collection and disposal of useless vessels.
3. Introduction of surface feeding fish into surface wells, etc.
4. Oiling of large collections of water in concrete tanks, which householders are unwilling to empty.

Anopheles costalis.—Occasionally found breeding in the town. Prefers pools, edges of the sun-swept swamps, cattle hoof depressions soiled with excrement, muddy water of scooped-out surface wells, borrow pits, and large cemented tanks attached to mosques.

1. Drainage of swamps and filling of pot holes.
2. Prohibition of digging shallow surface wells in swamp areas. Properly constructed wells should be sunk by the Government in populated areas. Water is at times difficult to obtain.
3. Oiling or dusting with Paris Green large temporarily swamped areas.
4. Prohibition of digging "Maututas" (furrow cultivation) in the town limits—a favourite haunt of Anopheline larvæ.
5. Installation of a piped water supply to all mosques, ablution tanks to be prohibited.

Although measures against the larval stage of mosquitoes are of primary importance, action against adults are efficacious remembering their dislike to strong wind and hot sun and their preference for sheltering in dark, humid places.

The following measures against the adult stage are suggested:—

Culex and Stegomyia.

1. Limiting trees, shrubs and dense foliage around dwelling houses supplemented by drastic pruning and thinning of existing trees.
2. Controlling bushes and weeds in open spaces and especially cemeteries.
3. More frequent whitewashing of bazaar houses.
4. Letting light and air into dark rooms by inserting additional windows.

Anopheles.

1. Cutting down heavy foliaged trees such as mangoes and replacing them by well-spaced trees of light, open foliage.
2. Rigorous cutting down of undergrowth and scrub.
3. Creating wind-swept, sun-baked areas between permanent breeding grounds and the town.

As a last measure, in view of findings of Dr. Haworth of Tanganyika Territory, I would suggest that the planting of coconut trees in the town area be prohibited. His researches have demonstrated that mosquito larvæ are capable of breeding in the crowns of coconut palms.

Biological Laboratory.

Examinations.—Examinations to the number of 259 were made, the majority of which were blood films taken from native children in connection with work on the "Malaria Survey" of the Protectorate. Other examinations included veterinary material comprising Trypanosoma and Piroplasma.

Anophelines to the number of 1,523 were dissected for the sporozoite rate, and 517 *Culex fatigans* for *Microfilaria*.

General.—A few new specimens were added to the Health Office Museum. Some duplicates and spare material were sent to the "London School of Tropical Medicine".

Towards the end of the year the Economic Biologist was placed on the Committee of the Peace Memorial Museum. Specimens and diagrams were arranged for exhibition purposes.

A large collection of rats trapped in various districts of both islands were sent to the British Museum of Natural History for identification. *Rattus rattus rattus* and *Rattus Norvegicus* are widely distributed.

During July, August and September the Economic Biologist was detailed in an advisory capacity to the Veterinary Division owing to an outbreak of Rinderpest in the island. This entailed much loss of valuable time, as infected areas had to be continuously visited.

Future Work.—Future work will comprise:—

1. Completion of Malaria Survey.
2. Investigations re Monkey Malaria. Many of the small monkeys of the Protectorate are infected with *Plasmodium kochi*.
3. *Bilharziasis*.—Study of the Molluscs in endemic areas as to their capability of acting as carriers of *Schistosomum hæmatobium* and *mansoni*. Some preliminary work has been done.
4. *Ankylostomiasis*.—Collection of adult worms for identification. Of the few examined only *A. duodenale* has been found. *A. caninum* and *ceyonicum* have been recorded from dogs, but not from humans. Worm counts of at least 100 typical human cases should be made to show the degree of infestation.
5. Investigations as to the prevalence of *Xenopsylla astia* and *brasiliense*.
6. *Filariasis*.—Comparison of Natural Infectability of *Anopheles costalis* and *funestus* to *Culex fatigans* as carriers of *Microfilaria bancrofti*. Capability of *Stegomyia faciata* (*Aedes argenteus*) and *Ochlerotatus pembænsis* to act as intermediate hosts.

W. M. ADERS.

TABLE No. 1.

Breeding places of various kinds of mosquitoes in Town Districts during 1924.

Months.	Tanks, Cisterns, Drums, Barrels and Earthen Vessels.			Drains and Cesspools.			Old tins and Bottles, etc.			Trees and Plants.			Boats and Dhows.			Swamps and Pools.			Holes in Trees, Grounds, Roads, etc.			Roof Gutterings.			Mosquito Traps.			Total.			Rainfall.	
	*S	*C	*A	S	C	A	S	C	A	S	C	A	S	C	A	S	C	A	S	C	A	S	C	A	S	C	A	S	C	A		Inches.
1924																																
January	20	1	0	0	0	0	5	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	25	2	0	0	274		
February	19	1	0	0	2	0	8	2	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	26	6	0	0	8'23		
March	21	3	0	1	0	0	2	0	0	0	0	0	19	8	0	0	0	0	0	0	1	0	0	0	0	43	11	1	0	5'64		
April	26	2	0	0	0	0	13	1	3	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	43	3	3	0	15'65		
May	61	6	0	0	2	0	18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	79	8	0	0	3'34			
June	38	1	0	0	3	0	15	2	1	0	0	0	1	2	0	0	0	0	0	0	0	1	0	0	0	55	8	1	0	2'61		
July	15	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16	0	0	0	1'33		
August	10	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	11	0	13	12	0	0	0'19		
September	8	3	0	0	0	0	3	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	4	5	0	15	11	0	0	3'38		
October	10	0	0	0	1	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	5	0	19	6	0	0	1'19		
November	12	0	0	0	1	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	6	9	0	26	10	0	0	3'20		
December	11	0	0	0	0	0	3	0	0	0	0	0	0	3	0	0	0	0	0	2	0	1	8	3	0	23	10	0	0	5'55		
Total	251	18	0	2	10	0	76	7	4	0	0	0	24	16	0	0	0	0	0	3	1	5	0	26	33	0	384	87	5	0	53'05	

*S—Stegomyia.

*C—Culex

*A—Anopheline.

TABLE No. 2.

Breeding places of various kinds of mosquitoes in Ng'ambo Districts during 1924

Months	Tanks, Cisterns, Drums, Barrels and Earthen Vessels.			Drains and Cesspools			Old Tins, Broken Bottles. etc.			Trees and Plants			Boats and Dhows			Swamps and Pools			Holes in Trees, Grounds. Roads, etc.			Roof Guttering			Total	Rainfall. Inches.	
	S*	C*	A*	S	C	A	S	C	A	S	C	A	S	C	A	S	C	A	S	C	A	S	C	A			
1924																											
January	111	30	2	2	2	1	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	115	33	3	2.74
February	119	28	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	121	28	3	8.23	
March	91	16	1	0	0	0	0	1	0	0	0	0	0	0	0	3	1	0	0	0	0	0	92	18	4	5.64	
April	86	23	2	1	0	0	0	2	1	0	0	0	0	0	0	9	17	0	0	0	0	0	91	34	21	15.65	
May	56	7	2	0	3	1	1	10	0	0	0	0	0	0	0	5	4	0	0	0	0	0	57	16	7	3.34	
June	45	5	0	0	2	1	1	0	0	0	0	0	0	0	0	1	2	1	0	2	0	0	46	10	4	2.61	
July	66	6	1	2	2	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	68	9	2	1.33	
August	53	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	53	0	0	0.19	
September	55	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	55	2	0	3.38	
October	11	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11	1	0	1.19	
November	22	0	0	0	1	0	0	2	0	0	0	0	0	0	0	1	0	0	0	0	0	0	22	4	0	3.20	
December	22	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	22	2	0	5.55	
Total	737	118	8	7	10	3	4	8	1	1	0	0	0	0	0	18	27	1	2	2	0	0	0	753	157	41	

* S—Stegomyia. C—Culex. A—Anophelinae.

APPENDIX IV.

SIXTH ANNUAL REPORT OF THE ZANZIBAR MATERNITY ASSOCIATION FOR THE YEAR ENDING 31ST DECEMBER, 1924.

1. The year has been one of substantial progress, and it is hoped that in the near future the Association may still further extend its sphere of usefulness. The new projects in contemplation, however, can only be carried out if greater assistance is given to the Association by Government and charitable bodies.

2. Analysis of the statistics given in this report disclose an increase of over 100 cases treated, the total for 1924 being 241 as against 137 in 1923; while the total number of visits paid by the staff was 4,806 as compared with 2,853. In both cases a record has been established.

3. It is especially pleasing that the Arab and African communities both show large increases. Taking as a basis of calculation the births registered (live and dead) at the Health Office, it will be found that 59% of Arab births, 51% of Swahili and 46% of Comorian have been attended by the staff.

4. Among the Indian communities it is very satisfactory to note that the growing repute of the Association has attracted two more communities, the Bohoras and the Bhattias, to become regularly subscribing communities.

5. Of the total number of births registered among Asiatic and African communities 44% were attended by the staff: and when it is noted that, in the Ismaili community who have their own independent midwife, there were 78 births, it will be seen that the percentage stated under-estimates the real usefulness of the Association.

6. For the greater part of 1924 the staff consisted of Mrs. J. H. Hewett, Mrs. L. Neuman and Mrs. Castellás, who are responsible for the satisfactory results of the year. Towards the end of the year Mrs. Hewett left Zanzibar on retirement, and the Association lost a valuable servant, who was especially popular in the Ithnasheri community. Fortunately, however, the services of Miss B. J. Locket, a qualified midwife with previous experience of Zanzibar, were secured and she commenced work immediately on the retirement of Mrs. Hewett. A pupil midwife is being trained.

To free Miss Locket for the additional work, especially child and general welfare work, required in connection with the impending inauguration of the Maternity Home and Dispensary, another qualified midwife, Mrs. Aranki, has been engaged from the 1st January, 1925.

7. Despite the efforts of the Committee it was found impossible to get work started on the building of the Maternity Home and Dispensary, for which the Wakf Commissioners have so generously promised Rs. 30,000. All plans and other preparations were made, but

pressure of other work prevented the Public Works Department from undertaking the building; while private contractors would not undertake the task within the figure specified. It is hoped that the building will be completed in 1925, and that, if it proves necessary to exceed Rs. 30,000, the extra money will be contributed by the Government in consideration of the dispensary side of the work.

8. Notwithstanding the increase in the sphere of activity of the Association in 1924, a credit balance is shown on the working for the year. The new programme contemplates bringing in, by means of the Home, many Mohammedan natives who will be unable to pay fees for the services rendered. In consequence a larger income is required to provide for this charitable and eugenic work, and it is essential that the Committee should obtain guarantees of increased revenue. The work contemplated in the Home is such as was desired by the Wakf Commissioners when they, at the inception of the Association, voted a temporary and tentative annual contribution. This contribution was discontinued, as the Commissioners did not consider that the Association at the time was of sufficient benefit to their Mohammedan communities. It is hoped that the figures for 1924 and the nature of the work contemplated in the Home will induce the Commissioners to make a really substantial annual contribution, and that Government will also increase its aid in connection with both the Home and the Dispensary work; and that thus the Association will be enabled to carry out its programme without curtailment.

9. Additional quarters for the new midwives have perforce had to be secured. Calculating for these and for salaries to four midwives, one pupil midwife and two female attendants for the Home, the Honorary Treasurer states that on the present income a full year's working of the new programme would involve a deficit of approximately Rs. 10,000.

10. The Association has ventured on the initial stages of the scheme with the object of proving that it has the genuine intention of looking after the interests of the natives of this country, and of doing something to counteract the still appalling infantile mortality which exists. By establishing a Home in the very heart of the native quarter of the town, it hopes to do good work in the matter of child-welfare as well as in purely midwifery activities.

It is this project solely which accounts for the large increase in expenditure estimated.

11. The Association wishes to record its thanks to the Indian communities which have supported the work by becoming regular subscribers, and also to the individuals who have contributed donations amounting during 1924 to Rs. 963-4-0. It is hoped that they will continue this financial support, which is much appreciated as helping on the general work of this charitable institution.

LAST OF DONATIONS, 1924.

	Rs.	as.
Messrs. Cowasjee Dinshaw & Bros.	150	0
Messrs. Esmailjee Jivanjee & Co.	150	0
Messrs. Karimjee Jivanjee & Co.	100	0
Mr. Tayebali Rajabali	100	0
Mr. Ebji Sivji	100	0
Mrs. L. Friedlander	100	0
Mr. Kersondas Soorji	51	4
Messrs. Hassanali Ghulamhusein & Bros.	51	0
Mr. Berumal Choitram	51	0
Mr. Abdulrasul Lakha Kanji	25	0
Mr. Vassonji Valubhdas	20	0
Mr. Ranchod Ramji	20	0
Mr. Lalji Pragji	15	0
Mr. S. H. Talati	15	0
Mr. Jani Chaganlal Purchotem	10	0
Mr. Mulji Valji	5	0
<hr/>		
Total Rs.	963	4
<hr/>		

The annual subscription providing for free midwifery service for the Bohora community has most generously been contributed by Messrs. Karimjee Jivanjee & Co.

THE ZANZIBAR MATERNITY ASSOCIATION.

BIRTHS ATTENDED BY THE ASSOCIATION MIDWIVES IN 1924.

Nationality	Association Records.			Registered at Health Office.		
	Male.	Female.	Total.	Live Births.	Dead Births.	Total.
Arabs	23	8	31	46	6	52
Swahilis	10	8	18	32	3	35
Comorians	3	3	6	11	2	13
Shihiris	—	2	2	7	2	9
Persians	2	—	2	7	—	7
Bohoras	15	7	22	41	—	41
Goans	9	15	24	39	—	39
Hindoos other than Bhattias	10	12	22	79	7	86
Bhattias	1	2	3			
Ithnasheris	52	42	94	86	11	97
Other Indian Mohammedans	5	1	6	37	8	45
Parsees	5	4	9	10	—	10
Seychellians	1	1	2	2	—	2
Ismailis	—	—	—	69	9	78
Other African natives	—	—	—	23	2	25
East Indians	—	—	—	1	—	1
Punjabis	—	—	—	1	—	1
	136	105	241	491	50	541

Cases attended by the Association Midwives in 1924.

Live Births	...	...	217
Dead Births	...	...	24
Abortions, etc.	...	...	12
			<hr/>
Total Number of Cases			253

Number of visits paid by the Association Midwives in 1924—4,806 (Maternity Visits 3,832, Ante-Natal Visits 870, Gynælogical 104).

THE ZANZIBAR MATERNITY ASSOCIATION.

REPORT FOR THE YEAR 1924.

COMPARATIVE STATEMENT OF WORK DONE BY ZANZIBAR MATERNITY ASSOCIATION.

NUMBER OF CASES TREATED.

<i>Natives of Zanzibar :</i>	1919	1920	1921	1922	1923	1924
Arabs	...	—	—	20	13	21
Swahilis (Mohammedans)	...	—	—	11	11	11
Swahilis (Christians)	...	—	—	—	1	—
Comorians	...	—	2	6	6	4
Shiliris	...	—	—	—	1	4
Persians	...	—	—	—	—	—
Total	...	—	2	37	31	41
<i>Foreign Communities :</i>	...	46	59	55	147	96
Grand Total	...	46	61	92	178	137

Total cases including abortions, etc., in 1923 and 1924 were 151 and 253 respectively.

NUMBER OF VISITS PAID BY ASSOCIATION MIDWIVES.

	1919	1920	1921	1922	1923	1924
Number of visits	...	353	697	1,854	3,549	2,853

EXPENDITURE OF THE ASSOCIATION.

1920.	1921.	1922.	1923.	1924.
Rs. 5,969-6-6.	Rs. 6,775-4-3.	Rs. 7,405-4-3.	Rs. 8,077-0-9.	Rs. 13,472-12-9.

THE ZANZIBAR MATERNITY ASSOCIATION.

STATEMENT SHOWING RECEIPTS AND PAYMENTS.

1ST JANUARY TO 31ST DECEMBER, 1924.

RECEIPTS.				PAYMENTS.			
		Rs.	as. p.			Rs.	as. p.
Balance brought forward	...	15,790	0 0	Salaries	...	10,648	2 9
		—	—	House Rent	...	780	0 0
Subscriptions	...	5,665	0 0	Passages	...	748	10 0
Fees	...	3,149	0 0	Drugs and Dressings	...	362	11 0
Donations	...	963	4 0	Medical Equipment	...	205	7 9
Miscellaneous Revenue	...	679	0 0	Furniture	...	68	1 3
Government Grant for 1924	...	4,500	0 0	Uniforms	...	74	4 0
		—	—			—	—
Total Receipts	...	14,956	4 0	Total Expenses	...	13,472	12 9
		—	—	Advances	...	165	0 0
		—	—			—	—
Total Receipts	...	14,956	4 0	Total Payments	...	13,637	12 9
		—	—	By Balance	...	17,108	7 3
Grand Total	...	30,746	4 0	Grand Total	...	30,746	4 0

BALANCE IS MADE UP AS FOLLOWS :—

Fixed Deposit Receipts of the National Bank of India, Ltd.	...	Rs. 15,000-0-0
Cash in Current Account with the National Bank of India, Ltd.	...	Rs. 2,108-7-3
		Rs. 17,108-7-3

(Sd.) SHAVAKSHAW H. TALATI,

Hon. Treasurer.

The Zanzibar Maternity Association.

Audited and found correct.

(Sd.) S. H. SIBLEY.

Zanzibar, 31st January, 1925.

THE ZANZIBAR MATERNITY ASSOCIATION.

STATEMENT OF ASSETS AND LIABILITIES ON 31ST DECEMBER, 1924.

LIABILITIES.				ASSETS.			
Excess of Assets over Liabilities :—				Rs. as. p.			
				Balance on 1st January, 1924			
				15,790 0 0			
				Rs. as. p. Balance on the year's working			
				on 31st December, 1924 :—			
	Rs.	as.	p.		Rs.	as.	p.
Fixed Deposits	15,000	0	0	Cash	...	1,318	7 3
Advances	165	0	0	Advances	...	165	0 0
Cash	2,108	7	3				
	<hr/>				<hr/>		
	17,273 7 3				1,483 7 3		
	<hr/>				<hr/>		
	Rs. 17,273 7 3				Rs. 17,273 7 3		
	<hr/>				<hr/>		
				(Sd.) SHAVAKSHAW H. TALATI,			
				Hon. Treasurer,			
				The Zanzibar Maternity Association.			
Audited and found correct.							
(Sd.) S. H. SIBLEY.							
Zanzibar, 31st January, 1925.							

APPENDIX V.

REPORT ON THE TREATMENT OF LEPROSY

BY

DR. D. S. SCOTT.

The treatment of the Funzi lepers by subcutaneous injections of Sodium Morrhuate was commenced on 19th May by Miss Philpot. After my arrival I examined nasal smears microscopically monthly and found that many were negative. Of those who had treatment from the beginning, the number of bacilli in the positive smears were very much less than in those who had just begun treatment. When smears from the original cases were examined in December all the positive ones showed a very marked diminution in the number of bacilli. In September the treatment was extended to all who asked for it, and now at the end of the year three only are not receiving treatment. Treatment was also commenced on the 25th October with the lepers at Nduni; all of whom now receive injections.

The following are the details of the treatment as carried out by Miss Philpot. The initial dose is 8 minims of a 3% solution of Sodium Morrhuate, increasing by 2 to 4 minims at each injection until reaction occurs. If the reaction is severe treatment is discontinued for a week and is resumed at the amount of the last dose given. Some appear to have very little reaction. In these the dose was increased to the maximum of 50 minims. This large dose given subcutaneously causes a good deal of pain and swelling and so now no increase is made after about 35 minims or 2 c.c. have been reached.

I consider that this treatment is satisfactory and from the actual microscopic evidence and from the general appearance of the patients there are hopes that we have found something to alleviate, if not to cure the disease.

APPENDIX VI.

AN OPERATION FOR RADICAL CURE OF HYDROCELE

BY

DR. D. S. SCOTT.

The type of hydrocele met with here is in nearly all cases of the large variety. At first I performed Jaboulay's operation, but the results were unsatisfactory. There was much orchitis, and in nearly every case a large hæmatoma of which many required opening. I then tried the Uganda operation, which consists in cutting a slice out of the skin of the scrotum and in cauterising with heat the cut edges of the hydrocele sac after the superfluous tissue has been removed. I was not satisfied with this, because there was the same subsequent orchitis and hæmatomata and, further, the appliances at my disposal for adequate cauterisation were unsatisfactory. I therefore decided upon the following operation for large hydrocele which has given good results:—

An incision is made from the root of the penis downwards and outwards over the apex of the scrotum and then upwards and inwards to a point on the posterior aspect of the scrotum opposite to the commencement of the incision. A second incision is made vertically from the same point paralld to the median raphe to the bottom of the scrotum and then upwards still paralld to the raphe to where the first incision ended. The piece of skin thus obtained is entirely removed and the sac is exposed. This I believe is part of the Uganda operation. The sac is tapped and opened freely and all redundant portions cut away. The whole cut edge is now crushed by artery forceps placed at right-angles to it and as close together as possible. The forceps are left in position until the whole edge has artery forceps on it. The first one applied is then removed and a suture begun. As each pair of forceps is removed the suture is carried forward until the whole edge is oversewn by a continuous suture. On completion the two ends of the suture are close together and are tied. A drainage tube is inserted and stitched to the skin. The tube is retained until the stitches are removed on the eighth day.

The results with this operation have been uniformly good and better than with any other method. It may be said that the drainage gives the good result, but many of the operations performed by other methods were drained without avoiding the unsatisfactory sequelæ. Oversewing the edge alone is not enough, for many of the sacs are very thick and have large vessels, and a plain suture does not include all the vessels, some of which therefore remain to cause trouble. The crushing of the edges makes absolutely certain.

ANNUAL VETERINARY REPORT

FOR THE YEAR 1924.

SECTION I.—ADMINISTRATION.

A. STAFF.

The Veterinary Staff of the Protectorate consists of:—

Veterinary Officer	1
Assistant Veterinary Officer	1
Veterinary Cadets	3
Attendants	16

B. FINANCIAL.

The sanctioned expenditure for the Veterinary Division was a total of Rs. 19,246, of which Rs. 18,341-11 cents were spent as follows:—

	Rs.	Cts.
Personal Emoluments	13,300	11
Clothing for Boys	64	00
Incidental	2,148	00
Landing Charges	1,269	00
Travelling Expenses	1,560	00
<hr/>		
Total	Rs. 18,341	11
<hr/>		

Revenue from Veterinary Services totalled Rs 24,030-36. The Revenue is derived from the following sources:—

	Rs.	Cts.
Cattle Importation fees	9,828	25
Cattle Exportation fees	984	25
Veterinary Hospital	124	50
Abattoir charges	7,811	75
Wharfage charges for land- ing cattle (about)	2,000	00
Landing Cattle	3,025	61
Cremation fees	256	00
<hr/>		
Total	Rs. 24,030	36
<hr/>		

EXPENDITURE ON NEW BUILDINGS, REPAIRS, ETC.

		Rs.	Cts.
GULIONI ABATTOIR.			
Attendants Room	1,345	21	
Boiler Room	1,519	86	
Additional Hoists	1,290	68	
Extension of Electric Main	1,611	14	
MJI MPIA.			
Dairy Scheme	7,435	00	
Cattle Dip	48	50	
PIGADURI QUARANTINE PARK.			
Cattle Shed	1,145	98	
Kennel for Dogs	170	86	
Makuti Shed	671	26	
Open Kraal and Goat Shed	999	24	
CHAKE CHAKE ABATTOIR.			
New Buildings	5,808	44	
Total		Rs. 22,055	17

C. LEGISLATION.

Government Notice No. 130 published in the *Official Gazette*, October 13th. Amendment to Rule 9 of "The Diseases of Animals Decree", by adding the word "or dipped" after the words "dipped or otherwise disinfected".

SECTION II.—DISEASES OF ANIMALS.

Rinderpest Outbreak in Pemba Island.

A recrudescence of Rinderpest occurred in the month of April, 1924.

The Assistant Veterinary Officer went to Pemba on April 21st and returned to Zanzibar on the 1st May, 1924. He reported that the disease was prevalent in the district of Weti and that the natives were very opposed to inoculation.

The Assistant Veterinary Officer again went to Pemba on 5th May and took with him a supply of serum, which had arrived from Dar-es-Salaam on 3rd May.

The method adopted by him to prevent the spread of the disease to hitherto clean areas consisted of the serum inoculation of all actual or probable contacts in the areas nearest to the clean areas, and restriction of the movement of cattle throughout the District of Weti.

Col. Doherty, Deputy Chief Veterinary Officer, Kenya, arrived at Zanzibar from Nairobi on 22nd May and proceeded to Pemba on 26th May in order to investigate and report on the best measures to combat the disease.

He came to the conclusion that the disease was undoubtedly Rinderpest and recommended:—

- (a) That a live stock survey and census be made of Pemba Island, beginning at the north end of the Island.
- (b) That daily returns should be kept and forwarded weekly to Headquarters through the District Officers. In this way all centres of infection would become definitely known.
- (c) That the staff making the survey should carry with them a supply of anti-rinderpest serum and syringes for use when infected areas were discovered and that there should be a vigorous control of movement for which the head native official of the locality would be made responsible.
- (d) That the survey should be carried out by the Senior Veterinary Officer assisted by two Arab pupils at present in Zanzibar and, in addition, that three intelligent men should be engaged to complete the staff, which would thus consist of the Senior Veterinary Officer and five local Arabs or intelligent natives. With his past experience of similar surveys made in Kenya, Col. Doherty anticipated the completion of the work within two months from the date of commencement with the staff indicated.
- (e) That the staff while working in Pemba should be responsible to the District Commissioner, who would be asked to inform all stock owners that failures to comply with the requests of the Senior Veterinary Officer would be treated as a serious offence.
- (f) That the work should be started at once as the clove and coconut harvests were ready and there would be great difficulties of transport.

After submitting his report and learning of the difficulties which prevented the recommendation contained in para (d) being carried out, Col. Doherty suggested that a capable Stock Inspector should be engaged from Kenya for the work.

Col. Neave was therefore engaged as Special Duty Officer. He arrived here on June 22nd and proceeded to Pemba the day after. The survey and cattle census were completed on 19th August—the investigation having thus occupied six and a half weeks. During the period the Assistant Veterinary Officer remained with him and rendered him every help in carrying out the survey and census work; and at the same time carried out serum inoculation work in the

infected centres. Every portion of the Island was visited by them and all the cattle were seen and counted. Col. Neave left Zanzibar on August 22nd.

The results of the census were as follows:—

District.	Bulls.	Cows and Heifers.	Calves.	Total.
Weti	940	5,565	2,030	8,535
Chake Chake	542	3,159	1,174	4,869
Mkoani	574	2,841	932	4,347
	<hr/>	<hr/>	<hr/>	<hr/>
	2,056	11,559	4,136	17,751
	<hr/>	<hr/>	<hr/>	<hr/>

The 1922 census showed the following figures for Pemba Island:—

District.	No. of Cattle.
Weti	5,687
Chake Chake	6,978
Mkoani	3,845
	<hr/>
Total	16,508
	<hr/>

The 1924 census thus showed an increase of 1,244 cattle; equal to 7.5% on the total number for the Island.

Rinderpest infection in the month of July was confined to Kiuyu, Lingwe, Shengeju, Kivuga, Kinyasini, Sizini, Shumba, Vimboni, Kijichame and Tumbe; whilst one isolation case was discovered at Matambwe.

There was no outbreak of Rinderpest in the Chake Chake and Mkoani districts, apparently due to the fact that a large percentage of the cattle of these districts had naturally attained immunity, and no definite cases were observed in either district.

During the year under review, Rinderpest remained confined to Weti district. It was prevalent in the north, north-east, eastern portions and in Matambwe, from whence it spread to Matangatwani, Khode and Masuka. The small outbreak at Matambwe spread considerably in spite of precautions adopted, but was stopped temporarily by serum inoculations. So far measures adopted to combat the disease were serum inoculations, segregation and restriction on the movement of cattle in and out of the infected area. It was, however, discovered that cattle were being illicitly moved from infected areas into clean localities, thus endangering the lives of some 5,000 head of cattle which this area contained, it was therefore found necessary to immunise cattle in the clean area of Weti district by means of double inoculation.

On 10th September I left Zanzibar for Pemba to carry out this work in conjunction with the Assistant Veterinary Officer stationed there. He had procured four susceptible calves infected with virulent blood obtained from a sick cow from Masuka. Three crushes were already erected at Verani, Jungoni and Fundo Island.

Work was started first at Crush No. 1, situated at Verani. The blood of infected calves was microscopically examined for trypanosomes, etc., for two days and proved negative. On the fifth day after the inoculation, and when the temperature was at its highest, one of the calves was bled early in the morning and virulent blood collected in sterilised flasks and utilized for inoculation purposes.

Each animal received an average dose of 2 c.c. virulent blood and a specific dose of anti-rinderpest serum according to size and weight, average dose being 35 c.c. for an adult.

Owing to the absence of ice, the flasks containing the virulent blood were kept in buckets of water which were placed in the shade. By this means it was found possible to keep up the necessary virulence.

The number of animals subjected to the simultaneous method at Verani totalled 2,787. Work at this place was completed on 15th September, 1924.

Similar procedure was adopted at Jungoni, where 1,194 cattle were inoculated from 15th to 16th September.

The same day, after finishing inoculations at Jungoni, we proceeded to Fundo Island and inoculated 224 head of cattle.

The same night I left Pemba and arrived at Zanzibar on 18th September, 1924.

The Assistant Veterinary Officer inoculated 1,407 head of cattle by the same method.

Total number of animals thus actively immunised against Rinderpest being 5,612.

Prior to this, however, 597 animals were serum inoculated by the Assistant Veterinary Officer in the north-east of Weti district between 9th to 20th July.

Of the 5,612 cattle inoculated, there was a total mortality of about 30. In this total are included all animals which died within three weeks of the inoculation, some of which must have succumbed to other diseases.

Deaths reported to have occurred in 1924, together with those observed, were 1,319 including, of course, deaths from all other causes.

Rinderpest in Zanzibar Island.

The year under review was marked by an outbreak of Rinderpest in this island as well as in Pemba. The first information of the appearance was received through the Senior Commissioner, who reported on 22nd July, 1924, that cattle were dying in the villages of Ndejani and Jendele at a distance of 15 miles from the town on the road to Chwaka. The day following I visited the above-mentioned villages in the company of the Senior Medical Officer of Health and, after seeing the clinical symptoms of about ten sick cattle, I diagnosed the disease as Rinderpest. So far 69 animals had died. According to the Sheha's statement, only four animals had recovered. The disease appears to have broken out there about seven weeks before and had by this time established itself well in this locality. Arrangements were made with the owners of cattle, through the Senior Commissioner, to carry out inoculations. All the cattle of these villages were ordered to be assembled at mile 15 on the 28th July and penned in kraals, which were being constructed for inoculation purposes.

On 25th July another report was received from the Senior Commissioner that Rinderpest had broken out at Kombeni, about eight miles distant on the Fumba Road. This place was visited on 26th July and about 50 cattle of the locality inspected. So far six animals had died and eight were noticed sick. It was arranged to carry out inoculations of cattle at both the infected centres on the same day.

On 28th July I proceeded, in company of the District Commissioner and the Economic Biologist, to Jendele with sufficient supply of serum and syringes. One hundred and nineteen cattle were inoculated in the following manner:—

At the time of inoculation the animals were also infected by rubbing into their nostrils infective material such as saliva or nasal discharge from diseased animals. An attempt was thus made to produce active immunisation by this simple method.

Double inoculation of cattle on similar lines was undertaken at Kombeni, where 177 animals were inoculated the same afternoon.

Veterinary Cadets were sent out to take charge of the infected centres with instructions to visit all the villages around and to report any outbreak of disease there.

The results achieved by the above-described method of inoculation appear encouraging. Nearly all the animals contracted the infection and recovered. Out of 119 cattle inoculated at Ndejani and Jendele only nine succumbed; the mortality being about 8%. Far better results were obtained at Kombeni, where all inoculated cattle reacted. According to the information received from the owners, it

was noted that their animals sickened for three or four days, showed all the symptoms of the disease such as lack of appetite, suspension of rumination, fever, salivation and diarrhœa and then recovered.

On 22nd August, Rinderpest broke out at Chwaka. By the time the report was received 24 animals had died and 35 were noticed sick, the remaining 17 were inoculated.

During the outbreak of Rinderpest in Zanzibar 115 animals died.

Trypanosomiasis.

Imported Stock.—One hundred and forty-five camels were examined and eighteen found infected. The type of parasites varied; the majority of parasites being *T. Evansi-brucei* type. All the infected animals were slaughtered at Pigaduri.

East-Coast Fever.

Imported Stock.—Eighty-nine cows were examined and fourteen showed Koch's Blue Bodies in their spleen smears. Twenty-four oxen examined, ten found infected. Three calves examined; all showed Koch's Blue Bodies in their spleen smears.

Local Stock.—Thirteen cows examined; eight proved positive on microscopical examination. All of these were from the Town Dairies. It is a known fact that infection in these cases is brought from shambas through infected ticks in fodder. Out of four calves examined one revealed Koch's Blue Bodies.

Mji Mpia dipping tank was continuously in use throughout the year. Cattle were dipped at a five-day interval. In all 19,992 animals were dipped during the year.

B. DISEASES OF EQUINES.

Horse Sickness.—No case reported.

Glanders.—No case reported or detected.

Ulcerative Lymphangitis.—No case occurred this year.

Trypanosomiasis.—The blood of forty-nine donkeys was examined, twenty three being local and twenty-six imported from Kismayu and Italian Somaliland. Two of the imported animals showed *T. congolense* on microscopical examination of their blood. Nine horses and three mules examined with negative results.

C. DISEASES OF CANINES.

Piroplas mosis.—Four dogs examined, one revealed *P. canis* on microscopical examination. Treated with trypan blue and recovered.

Trypanosomiasis.—Four examined with negative results.

Rabies.—No case reported or detected.

D. DISEASES OF BIRDS.

Asian Cholera.—There were two outbreaks of this disease, one at the British Residency, the other in the compound of a private individual. *Bacillus avisepticus* was found on the examination of slides prepared from blood taken from the great vessels.

SECTION III.—RECOMMENDATIONS.

With the exception of item Nos. 4, 12 and 13, none of the recommendations included in the 1923 Report have been carried out. It is urged that these be included with the following:—

1. One shed for accommodating goats and sheep at Pigaduri, dimensions 70 feet by 35 feet. At present there is only one shed for the housing of these animals, which is quite insufficient. The importation of these animals has increased enormously during the past few years. In 1924 more than 22,000 head arrived at Pigaduri. It is essential that proper accommodation be provided during their stay at the Quarantine Park.

2. Tile roofs for the existing Shed No. 1 and Shed No. 2 to be constructed in 1926. Makuti roof is not durable and has to be changed twice a year, which is very expensive.

3. Connecting roads from Mji Mpia to Ziwani road and Mji Mpia to the new Kikwajuni road to be metalled.

4. Erection of a shed for stud bulls. Accommodation to be provided for 12 bulls. A small revenue can be expected.

5. So far there are no arrangements made for the stabling of cart mules and donkeys which bring grass for milch cows at Mji Mpia. I recommend that adequate accommodation be provided for housing these animals. A shed for 20 animals is necessary. The owners are prepared to pay reasonable rent.

SHAH MOHAMMED KHAN,

Veterinary Officer.

TABLES.

TABLE No. 1.

Comparative table of Deaths in Zanzibar Town and Quarantine Station during the three years 1922-1924:—

	1922	1923	1924
Milch Cows ex dairies	38	124	68
Calves ex dairies	11	49	66
Cart Bullocks	6	22	3
Oxen	45	16	9
Goats	380	410	196
Sheep	8	20	13
Horses	3	1	1
Donkeys	18	16	35
Mules	3	6	6
Buffaloes	1	1	4
Camels	1	8	23
Total	514	673	424

Owing to the removal of about 105 cows from insanitary cowsheds in the town to Mji Mpia Model Dairies, where animals are regularly and systematically dipped at a five-day interval, the percentage of deaths among milch cows has been considerably reduced. In the previous year, the heavy mortality amongst cattle was mostly confined to East-Coast Fever, but since the introduction of cattle dips at Pigaduri and Mji Mpia, which has helped in the eradication of infected ticks, the deaths in cattle have been lessened.

The non-existence of pleuro-pneumonia amongst imported goats and sheep has helped to reduce the mortality.

TABLE No. 2.

Comparative table of Animals imported during the three years 1922-1924:—

	1922	1923	1924
Oxen	2,987	3,765	3,959
Cows	176	194	170
Calves	43	103	99
Goats	12,994	17,405	16,053
Sheep	3,518	4,791	6,544
Horses	8	3	6
Donkeys	50	13	10
Mules	7	16	18
Camels	16	117	62
Dogs	2	11	4
Kids	—	32	23
Rabbits	—	12	—
Total	19,801	26,462	26,948

From the above figures it will be seen that there is a slight increase in the number of cattle imported. The year was marked by the introduction of graded milch cows from the Highlands of Kenya into this Island by private owners. Undoubtedly these cows are good milkers. After one year's experience it can be said that these cattle stand the local climate well. It is anticipated that this new breed will replace the Socotran cows which are poor milkers.

It will also be seen that there is a marked increase in sheep imported during the year. The Swahilis are beginning to appreciate mutton in place of goat flesh.

All imported cattle are dipped at a three-day interval in Quarantine.

Total number of imported animals dipped was 11,374.

Equines having no Mallein certificates are subjected to the test.

TABLE No. 3.

Comparative table of Animals exported during the three years 1922-1924 :—

	1922	1923	1924
Oxen	266	453	588
Cows	6	3	3
Calves	—	3	1
Goats	258	988	789
Sheep	53	29	17
Donkeys	41	40	143
Kids	32	14	3
Mules	1	1	1
Horses	5	—	2
Buffaloes	4	4	9
Camels	—	2	1
Dogs	—	8	2
	—	—	—
Total	666	1,545	1,559
	—	—	—

There was a slight increase in the number of animals exported. Most of them were shipped to Pemba.

TABLE No. 4.

Table showing the number of animals examined and slaughtered in the Government Abattoir during 1924, compared with the previous 2 years :

	Slaughtered in Government Abattoirs.			Carcases Condemned.					
				Wholly.			Partially.		
	1922	1923	1924	1922	1923	1924	1922	1923	1924
Oxen	2,262	2,858	2,961	80	74	70	1,644	1,746	1,399
Cows	56	126	54	..	..	..	11	86	37
Calves	5	5	8	..	..	..	..	..	..
Goats	12,737	13,733	13,413	32	35	25	1,974	2,126	2,967
Sheep	2,492	3,622	4,461	14	12	21	950	1,263	1,703
Camels	3	45	58	..	..	..	3	24	48
Buffaloes	6	3	..	..	..	..	..	..	..
Total	17,561	20,392	20,955	126	121	126	4,482	5,245	6,644

Electric light and telephone were installed at the new abattoir. A boiler room for the boiling of measly meat was constructed and quarters for the abattoir attendant have now been provided.

Seventy carcasses were condemned for measles. Thirty-nine showing slight infection were passed by the Medical Officer of Health.

For Pleuro-Pneumonia contagiosa and emaciation 35 goats and 12 sheep were totally condemned.

During the year 244 oxen, 961 goats and 536 sheep were rejected as unfit for slaughter on ante-mortem examination and returned to their owners for further fattening.

TABLE V.

Table showing the number of Post-Mortem's performed during the year 1924.

	No. Performed.	E. C. Fever.	Retention of placenta.	Senility.	Pneumonia.	Rupture of Rumen.	Rapture diaphragm.	Septicæmia.	Sand colic.	Fowl Cholera.	Undiagnosed.
Oxen	.. 26	12	..	4	4	..	1	1	..	..	4
Cows	.. 3	1	..	..	2	1	..	..	..	..	..
Calves	.. 4	3	..	..	..	..	..	..	..	..	..
Buffaloes	.. ..	1	1	..	..	..	..	..	..	..	..
Camels	.. ..	..	..	..	..	..	..	..	..	..	..
Goats	.. ..	..	..	..	..	..	..	..	..	..	..
Sheep	.. 1	..	..	..	..	..	..	..	1	..	..
Fowls	.. 2	..	..	..	..	..	..	..	..	2	..
Total	.. 38	17	1	4	6	1	1	1	1	2	4

Most of the animals which die in the town or quarantine are subjected to a post-mortem examination.

TABLE VI.

Table showing the number of examinations carried out in the Veterinary Laboratory during 1924:—

TRYPANOSOMIASIS (local stock):—

	Number Examined.	Positive.	Negative.
Camels	8	2	6
Donkeys	23	0	23
Horses	2	0	2
Mules	2	0	2
Buffaloes	2	0	2
Goats	1	0	1
Sheep	1	0	1
Bullocks	11	0	11
	<hr/>	<hr/>	<hr/>
Total	50	2	48
	<hr/>	<hr/>	<hr/>

TRYPANOSOMIASIS (imported stock):—

	Number Examined.	Positive.	Negative.
Donkeys	26	2	24
Mules	1	1	—
Camels	145	18	127
Horses	7	—	7
Sheep	—	—	—
Goats	—	—	—
Dog	1	—	1
	<hr/>	<hr/>	<hr/>
Total	180	21	159
	<hr/>	<hr/>	<hr/>

EAST-COAST FEVER (local stock):—

	Number Examined.	Positive.	Negative.
Cows	13	9	4
Calves	4	1	3
	<hr/>	<hr/>	<hr/>
Total	17	10	7
	<hr/>	<hr/>	<hr/>

EAST-COAST FEVER (imported stock):—

	Number Examined.	Positive.	Negative.
Oxen	24	10	14
Cows	89	14	75
Calves	3	3	0
	<hr/>	<hr/>	<hr/>
Total	116	27	89
	<hr/>	<hr/>	<hr/>

PIROPLASMOSIS:—

	Number Examined.	Positive.	Negative.
Dogs	3	1	2
	<hr/>	<hr/>	<hr/>
Total	3	1	2
	<hr/>	<hr/>	<hr/>

FOWL CHOLERA:—

	Number Examined.	Positive.	Negative.
Ducks	2	2	—
Hens	1	—	1
	<hr/>	<hr/>	<hr/>
Total	3	2	1
	<hr/>	<hr/>	<hr/>

VETERINARY HOSPITAL, KISIWANDUI.

TABLE VII.

The total number of Animals admitted for treatment at Veterinary Hospital, Kisiwandui was 216 as follows:—

Horses	66
Donkeys	41
Camels	2
Cattle	63
Goats	2
Dogs	36
Cats	1
Monkeys	2
Geese	2
Parro'	1
	<hr/>
Total	216
	<hr/>

